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The Finnish Competition State and Entrepreneurial Policies in the Helsinki Region

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Tiivistelmä

Väitöskirjassa analysoidaan kilpailukykypolitiikan nousua, voimistumista ja ominaispiirteitä Suomessa 1990- ja 2000-luvuilla. Kilpailukykyä ja taloudellista kasvua korostavaa politiikkaa tarkastellaan sekä kansallisella tasolla että alueellisella tasolla pääkaupunkiseudun kaupunkien ja yliopistojen strategioiden kautta. Yhdistämällä valtion politiikan, kaupunkien strategioiden ja yliopistojen toiminnan analyysin väitöskirjassa osoitetaan taloudellisen kilpailukyvyn tavoitteen hallitsevuus ja läpäisevyys näillä kolmella toiminnan tasolla. Samalla tutkimuksessa kuvataan laajasti kilpailukykypolitiikkaan liittyviä ristiriitoja. Väitöskirja koostuu viidestä tieteellisessä aikakauslehdessä julkaistusta artikkelista ja yhteenvetoartikkelista.

Kansallisella tasolla tutkimuksessa tarkastellaan tiede- ja teknologiapolitiikkaa, yliopistopolitiikkaa, tietoyhteiskuntapolitiikkaa ja aluepolitiikkaa. Tutkimuksen pääpaino on tiede- ja teknologiapolitiikassa, sen yhä kasvavassa roolissa taloudellisen rakennemuutoksen edistäjänä ja muutoksessa kohti laaja-alaista, mutta samalla ristiriitaista innovaatiopolitiikkaa. Tämä muutos tuo esiin jännitteen voimistuvien taloudellisten tavoitteiden – innovaatioiden ja kilpailukyvyn – ja eri politiikkasektoreiden muiden yhteiskuntapoliittisten tavoitteiden välillä. Tiede-, teknologia- ja innovaatiopolitiikkaan läheisesti liittyen tutkimuksessa käsitellään yliopistopolitiikan muutoksia, joissa on korostunut paine tehokkuuteen, rationalisointiin ja yliopistotoiminnan kaupallistamiseen. Edelleen väitöskirjassa analysoidaan pyrkimyksiä kehittää suomalaista tietoyhteiskuntaa tieto- ja viestintäteknologian käyttöä edistämällä. Tässä suhteessa erityistä huomiota kiinnitetään taloudellisten ja muiden yhteiskunnallisten tavoitteiden väliseen tasapainoon. Aluepolitiikan suhteen tarkastellaan politiikan tavoitteiden muutoksia kohti kilpailukykyä korostavaa suuntaa.

Alueellisella tasolla tutkimuksen kohteena ovat Helsingin seudun kaupunkien elinkeinopolitiikka sekä kolmen seudulla toimivan yliopiston (Helsingin yliopisto, Teknillinen korkeakoulu ja Helsingin kauppakorkeakoulu) strategiat ja toiminta. Kaupunkipolitiikan suhteen tutkimuksessa analysoidaan erityisesti Helsingin kaupungin elinkeinopolitiikan ominaispiirteitä ja muutoksia. Yliopistojen toiminnan osalta tutkitaan niiden pyrkimyksiä kaupallistaa tutkimusta ja luoda tiiviimpiä yhteyksiä yritysmaailmaan. Erityistä huomiota kiinnitetään ristiriitoihin, joita kaupallinen toiminta yliopistoissa aiheuttaa. Kussakin kolmessa yliopistossa analysoidaan myös yhden yritysyhteistyötä edistävän kaupallisen välittäjäorganisaation toimintaa. Nämä organisaatiot ovat Helsingin tiedepuisto, Innovaatiokeskus ja LTT-Tutkimus Oy.

Väitöskirjan yhteenvetoartikkelissa luodaan synteesi viiden alkuperäisjulkaisun materiaalista ja liitetään niiden tulokset laajempaan makrososiologiseen keskusteluun kilpailuvaltion ja yrittäjäkaupunkien kehittymisestä. Suomea ja Helsingin seutua koskevien empiiristen tutkimustulosten avulla kommentoidaan, täsmennetään ja kritisoidaan Bob Jessopin ja Neil Brennerin teesejä valtion ja kaupunkien rakenteellisesta muutoksesta.

Abstract

The thesis examines the intensification and characteristics of a policy that emphasises economic competitiveness in Finland during the 1990s and early 2000s. This accentuation of economic objectives is studied at the level of national policy-making as well as at the regional level through the policies and strategies of cities and three universities in the Helsinki region. By combining the analysis of state policies, urban strategies and university activities, the study illustrates the pervasiveness of the objective of economic competitiveness and growth across these levels and sheds light on the features and contradictions of these policies on a broad scale. The thesis is composed of five research articles and a summary article.

At the level of national policies, the central focus of the thesis is on the growing role of science and technology policy as a state means to promote structural economic change and its transformation towards a broader, yet ambivalent concept of innovation policy. This shift brings forward a tension between an increasing emphasis on economic aspects – innovations and competitiveness – as well as the expanding scope of issues across a wide range of policy sectors that are being subsumed under this market- and economy-oriented framework. Related to science and technology policy, attention is paid to adjustments in university policy in which there has been increasing pressure for efficiency, rationalisation and commercialisation of academic activities. Furthermore, political efforts to build an information society through the application of information and communication technologies are analysed with particular attention to the balance between economic and social objectives. Finally, changes in state regional policy priorities and the tendency towards competitiveness are addressed.

At the regional level, the focus of the thesis is on the policies of the cities in Finland's capital region as well as strategies of three universities operating in the region, namely the University of Helsinki, Helsinki University of Technology and Helsinki School of Economics. As regards the urban level, the main focus is on the changes and characteristics of the urban economic development policy of the City of Helsinki. With respect to the universities, the thesis examines their attempts to commercialise research and thus bring academic research closer to economic interests, and pays particular attention to the contradictions of commercialisation. Related to the universities, the activities of three intermediary organisations that the universities have established in order to increase cooperation with industry are analysed. These organisations are the Helsinki Science Park, Otaniemi International Innovation Centre and LTT Research Ltd.

The summary article provides a synthesis of the material presented in the five original articles and relates the results of the articles to a broader discussion concerning the emergence of competition states and entrepreneurial cities and regions. The main points of reference are Bob Jessop's and Neil Brenner's theses on state and urban-regional restructuring. The empirical results and considerations from Finland and the Helsinki region are used to comment on, specify and criticise specific parts of the two theses.

Preface

The roots of this dissertation are in the research that I carried out during the writing of my master's thesis in 2000–2001. At that time, I was happy enough to be involved as a researcher in an interesting research project looking at the problems and processes of the commercialisation of academic research in three Helsinki region universities, headed by Marja Häyrinen-Alestalo at the Department of Sociology, University of Helsinki. This study subsequently led to other intriguing projects and I soon found myself preparing a research plan for a dissertation. As a consequence, the research work for the present dissertation has been carried out within numerous projects, and the thesis itself is a fusion of my original ideas and plans as well as the themes of these projects. During the course of this dissertation work I was involved in nine different international and national research projects: *Commercialisation of University Activities* (1998–2001), *Towards a Multipurpose Technology Policy* (2001–2003), *Science, Technology and Governance in Europe* (STAGE, 2001–2004), *Monitoring and Implementing Horizontal Innovation Policy* (OECD MONIT, 2003–2005) and a related study on *regional policy* (2006), *The Challenge of an Integrated Innovation Policy* (2005–2006), *The Merging of the Federal Competencies for Education, Research, Technology and Innovation in One Federal Department* (2006), *The Renewal of Public Services and the Functioning of the Markets* (2006–2008), and *Finnish Science Policy in International Comparison* (2007–2009). Although not all of these studies directly contributed to the thesis, it has been a great advantage for my work that I was able to participate in the projects. They have provided me with profound knowledge concerning science, technology and innovation policy developments across Europe as well as many contacts with colleagues in Finland and abroad. While there has mainly been a very fruitful interaction between the research projects and the dissertation work, given the large number of projects, an important challenge for me has been to unite the threads of the different studies in a way that results in a coherent whole. The summary article, I hope, succeeds in that task.

The above-mentioned projects have been funded by the Finnish Funding Agency for Technology and Innovation Tekes, the Ministry of Trade and Industry, the Ministry of Education, the European Commission and the University of Lausanne, which is gratefully acknowledged. In this respect, the ProACT research programme (2001–2005) of the Ministry of Trade and Industry and Tekes, which comprised two of the above projects, has been particularly important as it provided long-term funding as well as contacts with both researchers and policy-makers. For similar reasons, as well as in

thematic terms, the MONIT project, carried out within the framework of the OECD, has also been of key importance in my research. In addition, I have received funding from the Helsinki Institute of Science and Technology Studies (HIST) for finalising the thesis, for which I am also grateful.

While a thesis is ultimately an individual effort, many people have greatly helped me along the way and have substantially contributed to the outcome. It goes without saying that my greatest compliments go to Professor Marja Häyrinen-Alestalo, who has been my academic supervisor and boss throughout this journey. She initially drew me into the world of research (and that of research policy) and has since tirelessly commented on my manuscripts, applied for and developed new projects, and has devoted time to numerous discussions on research-related issues as well as other things. She has been extremely encouraging, yet critical when necessary. It has been particularly rewarding to work with her because of the opportunities and amount of responsibility she gives to young researchers. Overall, it has been very inspiring and a great honour to be supervised by, and to work with, one of the pioneers of Finnish science and technology studies.

The research work for this thesis was carried out at the Research Group for Comparative Sociology and I have been very fortunate in having great colleagues and friends in the group over the years, most notably Karoliina Snell and Aaro Tupasela. We have travelled a long road together, starting from our master's theses and continuing with post-graduate studies and PhD theses, and shared the same office for nearly all of these years. I have enjoyed our common path very much: it has been not only very rewarding research-wise to have worked with you but also a lot of fun! A specific word of thanks goes to Aaro for the English proof-reading of many of my article manuscripts. I am also very grateful for collaboration and friendship with Tuula Teräväinen, Suvi-Tuuli Waltari and Terhi Tuominen in many projects and co-authored articles. Furthermore, I want to thank all the previous members of our group for great cooperation and friendship, in particular Sampo Villanen, Emmi Pöyhönen, Saara Kupsala and Ulla Peltola. The Department of Sociology has been a comfortable work environment and I am thankful for all my colleagues there.

Two post-graduate seminars have been particularly important for my thesis work. At the Department of Sociology, the STEP seminar provided a solid forum of sociological commentary and I am grateful to the directors of the seminar, professors Risto Alapuro, Arto Noro, Risto Eräsaari and Keijo Rahkonen, as well as all the fellow researchers for great discussions and constructive comments. The seminar as well as the annual summer school of the Finnish Post-Graduate School in Science and Technology Studies (TITEKO) were a similarly inspiring environment with a broader science and technology studies perspective. I want to thank the directors of the school, professors Reijo Miettinen and Marja Häyrinen-Alestalo, as well as the coordinators, Petri Ylikoski, Mika Nieminen and Tuula Teräväinen, for

all these events and for the discussions that have invigorated my research.

Composing a summary article that provides a solid overall framework and interesting discussion often proves to be a hard task and my thesis has certainly not been an exception. When writing the summary article I received useful comments and feedback from many colleagues whom I want to thank: Erik Allardt, Neil Brenner, Katri Huutoniemi, Marja Häyrinen-Alestalo, Reijo Miettinen, Simone Scarpa, Tuula Teräväinen and Juha Tuunainen. I am also grateful to John Gage for correcting my use of the English language.

Once the manuscript of the thesis was finally at hand, the comments from the pre-examiners, Director Mats Benner from the Research Policy Institute at Lund University and Professor Raimo Lovio from the Helsinki School of Economics, proved extremely valuable. They made me rethink some of my interpretations and gave me a great opportunity to further improve my work. I am very grateful for these accurate, encouraging and also critical reviews.

Between May 2006 and May 2007 I took part in the VII Mentoring Programme of the University of Helsinki with State Secretary Anssi Paasivirta from the Ministry of Trade and Industry as my mentor. While my participation in the programme was not directly related to the thesis, the discussions and interaction during it provided me with an enormous amount of insight into the 'real world' of policy-making, which has undoubtedly been highly beneficial also for my research work. Our discussions happened to coincide with many important and unique events from the perspective of technology and innovation policy, such as the Finnish presidency of the EU, the spring 2007 elections leading to the establishment of the new Ministry of Employment and the Economy, and structural changes in Finnish industry. I am extremely grateful to Anssi Paasivirta for this opportunity and for all the discussions!

Finally, but most importantly, it is time to thank my family. As it is difficult to specify the things that are the most important, I want to thank my mother Pirkko and brother Jussi for, simply, just being there. The greatest gratitude I owe to my wife Kaisa, whom I want to thank for sharing everything with me and supporting me throughout this journey. I feel extremely fortunate to be with you. Our pride and joy is Joona, our son now 18 months old, to whom I dedicate this book.

Antti Pelkonen

Helsinki, 3 March 2008

List of original publications

I Pelkonen, Antti (2006) The Problem of Integrated Innovation Policy – Analyzing the Governing Role of the Science and Technology Policy Council of Finland. *Science and Public Policy* 33:9, 669–680.

II Pelkonen, Antti (2003a) The Political Objectives of Information and Communication Technologies – Towards a Technology-Driven Society? *Politiikka* 45:1, 50–61.[1]

III Häyrinen-Alestalo, Marja, Antti Pelkonen, Tuula Teräväinen & Suvi-Tuuli Waltari (2006a) Integrating Regional Policy with Technology Policy – The Experience of Finland. *Fennia* 184:1, 3–17.

IV Pelkonen, Antti (2005) State Restructuring, Urban Competitiveness Policies and Technopole Building in Finland: A Critical View on the Glocal State Thesis. *European Planning Studies* 13:5, 685–705.

V Pelkonen, Antti (2003b) Intermediary Organisations and Commercialisation of Academic Research. *VEST – Journal for Science and Technology Studies* 16:1, 47–77.

In the following summary article, these publications are referred to *in italics.*

[1] This article has been published in Finnish as Tieto- ja viestintäteknologia teknologiavetoisen yhteiskunnan rakentajana ja yhteiskuntapolitiikan välineenä. An English translation of the article is included in the dissertation.

Summary article

1 Introduction

In the early 1990s, Finland underwent a severe economic recession which was followed by a rapid restructuring and fast growth of the economy. At the end of the decade, Finland was listed at the top of several global competitiveness rankings and considered as a frontrunner in various policies related to knowledge-based growth, such as science and technology policy and education policy. Subsequently, this development gave rise to notions such as the "Finnish model" (Castells & Himanen 2002) and the "Finnish miracle" (Benner 2003) and has generated a vivid discussion both in academic and policy circles (see e.g. Schienstock 2007; Heiskala & Hämäläinen 2007; Ylä-Anttila & Palmberg 2007; Saari 2006a; Heiskala & Luhtakallio 2006; Ornston 2006; Dahlman et al. 2006; Oinas 2005; European Commission 2003). Accordingly, Finland has been regarded as an example of successful adaptation to globalisation in that it has been able to move into knowledge-intensive production while simultaneously maintaining inclusive welfare structures. Similarly, the Helsinki region, the capital area of the country, experienced a period of high economic growth, in particular through the progress of the information and communication technology sector. The region became one of the fastest growing urban areas in Europe and has been labelled among the world's "hot new tech cities" (Van den Berg et al. 1999; Levy 1998) and Europe's "metropolitan stars" (Van Winden et al. 2007). During the last decade or so, Finland and the Helsinki region have thus become 'model students' in terms of economic growth and competitiveness.

The articles in this dissertation analyse policy changes related to these transformations. They examine the intensification and characteristics of policies that emphasise economic competitiveness and growth as well as some contradictions related to these policies. This accentuation of economic objectives is studied at the level of national policy-making as well as at the regional level through the policies and strategies of cities and three universities in the Helsinki region. By combining the analysis of state policies, urban strategies and university activities, the study illustrates the pervasiveness of the objective of economic competitiveness and growth across these levels and sheds light on the features and contradictions of these policies on a broad scale.

The development in Finland is often presented as one in which the goals of the economy have been combined well with the objective of balanced societal and regional development (e.g. Saari 2006a). Yet, given the pervasiveness of economic discourse in public and political discussion

as well as the recent growth of societal inequalities (e.g. Riihelä et al. 2007) and regional disparities (Hanell et al. 2002; *Pelkonen 2005*), it is worth asking whether and to what degree there has been a more profound shift towards market- and competitiveness-oriented policies. For this purpose, at the level of national policies, I have examined general changes in governmental policy priorities as well as analysed specifically various sectors of policy. My central focus has been on the growing role of science and technology policy as a state means to promote structural economic change and its transformation towards a broader, yet ambivalent concept of innovation policy. This shift brings forward a tension between an increasing emphasis on economic aspects – innovations and competitiveness – as well as the expanding scope of issues across a wide range of policy sectors that are being subsumed under this increasingly market- and economy-oriented framework. Related to science and technology policy, I have paid attention to adjustments in university policy in which there has been increasing pressure for efficiency, rationalisation and commercialisation of academic activities. Furthermore, I have looked at political efforts to build an information society through the growing application of information and communication technologies and have analysed the balance between economic and social objectives related to these efforts. Finally, I have examined changes in state regional policy priorities and the tendency towards the goal of competitiveness. In this respect, I have taken the Centre of Expertise Programme, a key governmental effort to promote regional innovation infrastructures, as a case in point.

At the regional level, my empirical focus has been on the policies of the cities in the capital region of Finland as well as strategies of three universities operating in the region, namely the University of Helsinki, the Helsinki University of Technology and the Helsinki School of Economics. As regards the cities, my main focus has been on the changes and characteristics of urban economic development policies, in particular in the City of Helsinki. Furthermore, I have analysed the changing relationship between the Helsinki region cities and the state in terms of promoting economic development in the region. With respect to the universities, I have focused on their attempts to commercialise research and thus bring academic research closer to economic interests. Related to the universities, I have analysed the activities of three intermediary organisations – the Helsinki Science Park, Otaniemi International Innovation Centre and LTT Research Ltd – that the universities have established in order to increase cooperation with industry. While the universities and intermediary organisations face various problems in terms of commercialisation, the integration of this third economic function into the traditional functions of the university, education and research, is a particularly salient challenge.

In this summary article I will relate my studies and their results to a broader macrosociological discussion concerning the emergence of competition

states and entrepreneurial regions. My main points of reference are Bob Jessop's and Neil Brenner's theses on state and urban-regional restructuring. Along largely similar lines, they argue that national welfare states that are oriented towards equality and redistribution at the national level have given way to competition states that focus on innovation and competitiveness, put increasing weight on competitive advantages at the regional level and largely subordinate social objectives to economic concerns. Jessop (2002) calls this new state form the "Schumpeterian competition state" while Brenner (2004) uses the notion of a "rescaled competition state regime". The rise of the competition state is accompanied by the emergence of entrepreneurial cities and regions at the subnational level. Essentially, Jessop and Brenner argue that the goal of maintaining and enhancing economic competitiveness with respect to other cities becomes an increasingly central concern of urban policy-making. This also refers to the globalisation of cities in which cities and regions become more competitive actors and are increasingly connected to global networks and hierarchies rather than being tied to national economies.

This summary article provides a synthesis of the material presented in the five original articles and relates that material to the discussion concerning competition states and entrepreneurial regions. I will use Jessop's and Brenner's theses as a framework in which I will present my results, but I will not apply or 'test' their theses as such since their scope is broader than has been the case in my studies. Rather, when applicable, I will juxtapose my results and Jessop's and Brenner's theses and on that basis comment on some aspects of the theses. Furthermore, I will use these more theoretical ideas to further elaborate some perspectives developed in the articles. I thus formulate the research question of this summary article at this point as follows: To what degree do the policy changes in the studied policy sectors at the national level and in the Helsinki region reflect Jessop's and Brenner's theses of the competition state and entrepreneurial regions? In responding to this question, I do not intend to go into a detailed discussion of historical events but rather to provide a general macrosociological analysis of state and urban restructuring in Finland since the 1990s.

The summary article is composed as follows. First, I will describe in more detail the five original studies, their research questions and the data that I have used. I will then present Jessop's and Brenner's frameworks more closely, comment on them and specify the research question of this summary article. In sections 4, 5 and 6, I will present an analysis of policy changes at the national level, paying specific attention to science and technology policy and regional policy. In section 7, I will further scrutinise the regional dimension by presenting my results concerning the emergence of urban competitiveness policies and university-industry links in the Helsinki region.

2 Original studies: research questions, data and methods

The five articles in this dissertation focus on policies at both national and regional levels and pay attention to several relevant policy sectors. All articles deal with policy changes at the national level in Finland. The fourth (*Pelkonen 2005*) and fifth (*Pelkonen 2003b*) article combine the analysis of national policy changes with those at the regional level. At the national level, the main focus is on science and technology policy, university policy and regional policy. At the regional level, it is on the economic development policies of the cities in the capital region and the universities' strategies and approaches as regards the commercialisation of academic research. As the articles centre on divergent topics, each article also uses a specific conceptual framework.

The articles have been developed as parts of four research projects that were carried out at the Research Group for Comparative Sociology, University of Helsinki.[2] The first article was originally written related to the OECD's research project Monitoring and Implementing Horizontal Innovation Policy (MONIT, 2003–2005), in which 13 countries participated to study and compare governance of science, technology and innovation policies. The third article is based on a further study on regional policy that was carried out related to the MONIT project. The second and fourth articles were developed during a research project called Towards a Multipurpose Technology Policy (2002–2004) which was part of the ProACT research programme of the Ministry of Trade and Industry and the Finnish Funding Agency for Technology and Innovation, Tekes. The fifth article is based on the research project Commercialisation of Academic Activities (1998–2001) which was funded by the Ministry of Trade and Industry as a part of the so-called first technology studies programme of the Ministry.

2 The Group operates at the Department of Sociology of the University of Helsinki and is part of the Helsinki Institute of Science and Technology Studies (HIST), a joint network institute of the University of Helsinki, the Helsinki University of Technology and the Helsinki School of Economics.

Articles focusing on policies at the national level

The first article, *The Problem of Integrated Innovation Policy,* concentrates on the ongoing transformation of science and technology policy towards a broader concept of innovation policy, and analyses governance challenges related to this shift. Compared to traditional science and technology policy, emerging innovation policy is considered to embody a broader scope of policy issues and actors and thus presents new requirements in terms of governance. By further developing Underdal's (1980) concept of policy integration, the concept of integrated innovation policy is presented in the article. The concept highlights two central governance challenges that innovation policy is currently posing for national governments and administrations. First, the growing importance of innovation across various policy sectors emphasises the horizontal dimension of innovation policy-making. This brings forth a need to coordinate policies across state administration and to balance the objectives of various policies. Second, the expanding scope of policy as well as various risks related to new technologies question the traditionally rather closed forms of decision-making and call for more participatory forms of policy-making. Empirically, the article focuses on the analysis of the operation of the Science and Technology Policy Council which directs and coordinates Finnish science and technology policy under the chairmanship of the Prime Minister. The central research question is how and to what degree do the Council's structure and mode of operation correspond to the new requirements of integrated innovation policy. For this purpose, the article examines the position and role of the Council in the Finnish innovation system as well as changes in this respect over time. The Council's representative structure and the comprehensiveness of its policy guidelines are also analysed.

The second article, *The Political Objectives of Information and Communication Technologies*, analyses the objectives that have been related to information and communication technologies (ICTs) in Finland between 1980 and 2000. Globally, Finland has been one of the frontrunners in the development of ICTs, and heavy public investments have been made into the sector particularly since the early 1980s. In terms of economic growth, the Finnish ICT sector has undoubtedly been a success story. Less attention has, however, been paid to other, larger societal objectives and expectations – such as balanced regional development, sustainability, democratic public participation and enhanced public services – that have been directed to ICTs and how these have been balanced with economic objectives. In the article the interplay and shifts between economic and societal objectives are analysed over the period of the last 20 years. The shifts of objectives are studied in relation to general changes in governmental policy and social and technology

policies in particular. Together with the timing of radical technological changes, adjustments in government's policy orientation explain rather well the shifts in the objectives related to ICTs. Three divergent periods in terms of a different balance between economic and social objectives are identified as follows. During the 1980s, broad societal objectives were emphasised whereas in the early 1990s economic goals and technological development became more pronounced. Towards the end of the decade and the early 2000s, the perspective on information and communication technologies broadened again, and societal objectives were, at least rhetorically, highlighted.

The third article, *Integrating Regional Policy with Technology Policy*, scrutinises changes in Finnish regional policy and takes the Centre of Expertise Programme as an object of study to illustrate these changes.[3] The historical part of the article analyses shifts in regional policy priorities as well as the links between regional policy and science, technology, economic, industrial and social policies from the 1950s to the present. Particular attention is paid to the growing integration of the goals of regional policy with those of technology policy. In this respect, the article shows how ideas of balanced regional development based on the welfare state ideology have given way to the competitive priorities of a knowledge-based economy. In the second part of the article, the operative model and evolution of the Centre of Expertise Programme, a governmental initiative established in 1994 to promote top-level expertise and networking at the regional level, is analysed. Placed at the intersection of regional and technology policies, the programme provides a good angle for studying the integration of these two policies. Attention is particularly paid to the obstacles and tensions in terms of policy integration as well as to the varying interpretations of the knowledge-based economy during the evolution of the programme.

Articles combining the analysis of national policies and urban-regional strategies in the Helsinki region

The fourth article, *State Restructuring, Urban Competitiveness Policies and Technopole Building in Finland*, concentrates on the processes of state restructuring and changes in relationships between the nation state and regions under globalisation. Neil Brenner's (2003) discussion on the glocalisation of the nation state and globalising cities forms the theoretical framework of the article. The central research question is whether Brenner's glocalisation thesis is an adequate model to describe the relationship between the state and urban regions in Finland. For this purpose, the article focuses on changes in state policy orientation in Finland, the relationship between

3 This article was co-authored by me, Marja Häyrinen-Alestalo, Tuula Teräväinen and Suvi-Tuuli Waltari. Besides participating in the planning and execution of the whole study, my contribution to the article consists of the analysis concerning the Centre Expertise Programme.

the nation state and the capital region and the emergence and characteristics of urban competitiveness policies in the capital region. As for national-level policies, attention is paid to changes in technology, regional and economic policies and their implications for the capital region cities. At the regional level, the responses of the capital region cities to the state policies are analysed as is the formation of policies emphasising economic competitiveness. The article identifies the construction of various kinds of technopoles – high technology-based agglomerations of research and business activities – as a particularly important part of new urban policies aimed at increasing regional competitiveness. A threefold classification of the Helsinki region technopoles – industrial complexes, technology parks and science centres – is developed and their main characteristics analysed.

The fifth article, *Intermediary Organisations and Commercialisation of Academic Research,* looks at the approaches and means of three universities in the Helsinki region to commercialise academic research. Particular attention is paid to the operation of intermediary organisations that the universities have established in order to increase links with enterprises. The studied universities and the respective intermediary organisations are the University of Helsinki and Helsinki Science Park, Helsinki University of Technology and Otaniemi International Innovation Centre, and Helsinki School of Economics and LTT Research Ltd. The article analyses how these different universities have started to commercialise academic research and what kinds of problems commercial activities bring along in the intermediary organisations. Particular attention is paid to the issue of how the commercial activities are integrated into the basic university functions of teaching and research. In answering these questions, the article also highlights some contradictory tendencies in the emerging innovation policy paradigm in Finland. Theoretically, the article scrutinises the nature of two models, the Triple Helix (Etzkowitz & Leydesdorf 2000) and the Mode 2 (Nowotny et al. 2001), that have been widely used to describe and explain the changes in universities and university research.

Data and methods

Main sets of data and data collection

In these analyses, four main types of data have been used: 1) personal interviews, 2) document material, 3) statistics, and 4) speeches and written statements. In each article, interviews and document material were the principal types of data. Statistics were used in all articles, but more as a supplementary source of information. In most cases, statistics were used to provide specific information on a certain issue. Speeches and written statements were used as an important source of information in the third and

fourth articles. Below I will describe in more detail each of the data sets.

Interviews. Apart from the second article (*Pelkonen 2003a*), specific interview data were collected for the purposes of each article. The interviewees were selected on the basis of the research problems of the articles and in each case the aim was to choose the most important persons from the relevant organisations as interviewees. The interviewees were either identified on the basis of previous knowledge of the issues or by using a snowball method in which interviewees propose relevant persons to be interviewed. Furthermore, it was considered important that the interviewees could shed light on the studied issues from different angles. For instance, in the study concerning the role of the Science and Technology Policy Council (*Pelkonen 2006*) experts that are not directly involved in the work of the Council were also interviewed. Nearly all those who were asked agreed to be interviewed. Four persons refused, but in these cases the person proposed another, in his/her opinion, more suitable person to be interviewed. Hence there were no difficulties in obtaining interview material although some of the interviewees held high positions such as ministers, mayors and high-ranking civil servants which could have posed problems in terms of access (cf. Devine 2002, 200). In addition to these article-specific interviews, extensive interview data with decision-makers in Finnish technology policy have been used in all the analyses (except for the fifth article, *Pelkonen 2003b*). This set of data was collected by Marja Häyrinen-Alestalo and Ulla Peltola in 2000. Besides being used as the principal interview data in the second article, it has served as a source of generic background information on Finnish technology policy. The total number of interviews was 75.

The interviews were carried out in a semi-structured manner in which the themes to be covered and related questions were planned in advance, but during the interview a lot of flexibility was allowed so that the interviewees were able to talk about issues they considered important. Given their nature as expert interviews, the questions were tailored specifically for each interview. The duration of the interviews varied between 1 and 2.5 hours and they were taped and transcribed. Some interviews were conducted together with my colleagues from the Research Group for Comparative Sociology which also allowed for further discussion concerning the interpretation of the data.

The interviewees can be divided into eight groups on the basis of the organisation they represent and the position of the interviewee in that organisation (Table 1). As this study focuses on policy-making at national and regional levels, a large number of the interviewees were senior civil servants in state and urban administrations. Civil servants in ministries and state agencies form the largest individual group of interviewees, comprising 37 interviews. These interviewees represent a rather large array of the state administration covering 9 ministries and 5 different state agencies. In addition to civil servants, interviews at the national level include political decision-makers and representatives of labour market organisations. At the

regional level, the interviewees include political decision-makers and senior civil servants from the cities of Helsinki and Espoo as well as a representative of a regional development organisation (Culminatum Ltd – Helsinki Region Centre of Expertise). University interviewees cover the three universities that have been under study, namely the University of Helsinki, Helsinki University of Technology and Helsinki School of Economics. They include both representatives from the universities' administration and university professors. The interviewees from the intermediary organisations were directors and other key administrators in each organisation.

Table 1. Interview data.

Interviewees	Number
Political decision-makers	3
Senior civil servants in ministries and state agencies	37
Representatives of labour market organisations	2
Representatives of the capital region cities' administration and regional development organisations	5
University directors and administrative staff	12
University professors	6
Representatives of intermediary organisations	10
Total	75

Document material. Three types of document material were used: a) policy guidelines, official documents and reports, b) laws and statutes, and c) minutes of meetings.

a) Policy guidelines and official documents cover official papers at supranational, national and regional levels. Together with the interviews they were the principal source of data in all the articles and were used to reflect the official viewpoint. However, the information provided in the documents was not taken for granted but in many cases additional and specifying information was gained from the interviews. The time span of the used documents varies depending on the issue in question. Most of the documents fall between the early 1980s and early 2000s, although there are some documents from previous years. In many cases, the documents have been analysed over an extensive period of time in order to allow for the identification of policy changes.

At the supranational level, documents include selected policy guidelines of the European Commission and the OECD in science, technology and regional policies. Although policies at this level have not been an object of analysis as such, some relevant documents have been used to reflect the guidelines and emphases of the supranational actors that have an increasing influence on policies at national and regional levels. At the national level, various types of official documents have been analysed. Cabinet programmes between

1957–2003 have been used to reflect broad changes in government policies. For this purpose, they provide a good source since the cabinet programme is the main document in which the government presents its priorities, and it covers all sectors of governmental policy. Although the programmes have become more detailed over the last decade, they describe the governmental priorities only on a rather general level. Furthermore, all guidelines and measures presented in the programme are not always implemented. In general terms, it has, however, been characteristic of Finland that governments have been quite strongly committed to the programmes. Other national-level official documents that have been used can be divided by policy sectors:

- *Science, technology and innovation policy:* Council of State accounts and resolutions; reviews and other publications of the Science Policy Council, later the Science and Technology Policy Council, archive documents related to the history of the Council; strategy documents, annual reports and memoranda of the Ministry of Trade and Industry, the Ministry of Education, the Finnish Funding Agency for Technology and Innovation (Tekes), and the Academy of Finland (main funding organisation for academic research); various committee reports.

- *Information society policy*: National information society strategies; reports of the Advisory Board on Electronic Data Processing, the Information Society Advisory Board and the Information Society Council; strategies and reports of the Ministry of Transport and Communications and the Ministry of Finance; official papers of the Government Information Society Programme.

- *Regional policy:* Council of State decisions and accounts on regional development and related memoranda; committee and working group reports and strategies of the Ministry of the Interior; guidelines, reports and evaluations related to the Centre of Expertise Programme and the Regional Centre Programme.

- *Economic policy:* Final report of Finland in the Global Economy Steering Committee; official documents related to changes in corporate taxation.

At the regional level, policy guidelines and official documents concentrate on the policies of capital region cities, the strategies of the three universities and documents related to the technopoles and intermediary organisations. They cover:

- Official papers and strategies of the cities of Helsinki, Espoo and Vantaa, as well as Culminatum Ltd, concerning economic development policies and planning.

- Strategies, annual reports and histories of the University of Helsinki, Helsinki University of Technology and Helsinki School of Economics.

- Planning documents, annual reports and brochures related to various technopoles in the capital region.

- Planning documents, annual reports and financial statements related to the three intermediary organisations (Helsinki Science Park, Otaniemi International Innovation Centre, LTT Research Ltd).

b) Laws and statutes were used in two articles to reflect changes in the formal legal framework. They were analysed over a long period of time to allow for the identification of changes. This type of data was particularly important in the first article in which the statutes of the Science Policy Council (1963–1986), and it successor, the Science and Technology Policy Council (1987–2005) were analysed. This analysis allowed for a description of changes in the formal tasks and composition of the Council which also reflected broader changes in the Council's position. In a similar manner, statutes for the advancement of the regions were used as source data in the third article.

c) Minutes of meetings were analysed in two articles to provide a more detailed picture of policy preparation, processes and substance. Although the minutes used did not report the discussion of the meetings, the issues and viewpoints of different actors come forward in the documents. In the first article, the minutes of the meetings of the Science Policy Council and the Science and Technology Policy Council were analysed from 1983 to 2003. In the fourth article, the minutes of meetings of the Helsinki city council and city government (2002) and Espoo city government (2001–2002) were used. They were particularly utilised to provide further information on the development of urban economic development policies and the building processes of various technopoles in the region.

Statistics. The statistics that have been used fall into two broad categories. On the one hand, they include statistics on research and development, particularly concerning R&D funding, and regional development from the OECD, Statistics Finland and Tekes. Some of these statistics were personally requested from Tekes. On the other hand, university statistics from the Kota database[4] were used in the fifth article.

4 The Kota database is run by the Ministry of Education and provides statistics on Finnish universities. It is available at http://kotaplus.csc.fi:7777/online/

Speeches and written statements. These types of data were often used to supplement document material. Naturally, speeches and written statements do not have similar official status and importance as official documents and are not prepared with similar exactitude. Viewpoints put forward in speeches and written statements, however, represent the point of view of the person and (most often also) the organisation he/she represents. Furthermore, often many interesting issues come up in speeches because they are prepared over a short period of time and deal with topical issues. Most of the speeches and written statements used in this study were speeches by ministers (totalling 10) and by mayors of the cities of Helsinki and Espoo (11). Other speeches were by senior civil servants in ministries (2) and university directors (2).

Table 2 below summarises the research questions, data and main concepts of the original articles.

Table 2. Summary of the research questions, data and main concepts of the original publications.

Article	Research questions	Key sets of data	Framework or main concepts discussed
I The Problem of Integrated Innovation Policy – Analyzing the Governing Role of the Science and Technology Policy Council of Finland	How does the structure and mode of operation of the Science and Technology Policy Council correspond with the new requirements of an integrated innovation policy?	Official documents issued by the Council, minutes of the Council's meetings, the Council's statutes, archive material; 18 interviews with political decision-makers, civil servants from ministries and public agencies as well as representatives of labour market organisations and universities; statistics on R&D funding.	• policy integration (Underdal 1980) • integrated innovation policy • horizontal policy
II The Political Objectives of Information and Communication Technologies – Towards a Technology-Driven Society?	What kinds of objectives have been related to information and communication technologies in technology policy programmes and societal development strategies in Finland between 1980 and 2000?	Cabinet programmes (1976–1999), strategies and official papers in social and technology policies between 1980 and 2000, in particular related to the development and application ICTs and the promotion of the Finnish information society; 17 interviews with civil servants in technology policy administration.	• the new economy thesis (Castells 2001) • distinction between economic objectives and (broader) societal objectives
III Integrating Regional Policy with Technology Policy – The Experience of Finland	How have the priorities of Finnish regional policy changed and how have they been integrated into the framework of technology policy? What kinds of obstacles and tensions in terms of policy integration have emerged in the Centre of Expertise Programme? How has the model of the knowledge-based economy been interpreted during the evolution of the programme?	Cabinet programmes (1957–2003), official documents in technology, economic and regional policies at European, national and regional levels, statutes on regional development; 5 interviews with senior civil servants in technology and regional policy administration; speeches by political decision-makers; R&D statistics.	• policy integration • the knowledge-based economy as a political objective

Table 2 continued

Article	Research questions	Key sets of data	Framework or main concepts discussed
IV State Restructuring, Urban Competitiveness Policies and Technopole Building in Finland – A Critical View on the Glocal State Thesis	Is the glocalisation thesis an adequate model to describe the relationship between the state and urban regions in Finland? How have the cities in the capital region responded to state policies and the pressures of globalisation?	Technology, regional and economic policy guidelines, capital region cities' official documents related to economic development policies and technopoles, minutes of meetings of Helsinki and Espoo city governments; 10 interviews with civil servants in the national technology and regional policy administrations and representatives from the cities of Helsinki and Espoo and regional organisations; speeches by political decision-makers and civil servants; R&D statistics.	• glocalisation and glocal state formation (Brenner 2003; 1999; 1998)
V Intermediary Organisations and Commercialisation of Academic Research	How have three universities in the capital region of Finland started to commercialise academic research? What kinds of problems do commercial activities create in the universities and intermediary organisations? How are commercial activities integrated into the basic university functions?	Cabinet programmes (1987–1999), official documents on state university policy, and document material related to the universities and intermediary organisations; 25 personal interviews with representatives from the universities and intermediary organisations; university statistics.	• Triple Helix (Etzkowitz & Leydesdorf 2000) • Mode 2 (Novotny et al. 2001)

The research process and analysis of data

The studies included in this thesis were carried out between 1999 and 2006. The long time span is due to the fact that the empirical work concerning the fifth article (*Pelkonen 2003b*) was carried out between 1999 and 2000 when I completed my master's thesis (Pelkonen 2001). The article itself was written later and further develops the ideas of the thesis. In 2002 I started post-graduate studies and the research work that has led to the other articles of this thesis. During the course of this research work, my original research plan for the dissertation underwent significant changes, but at the same time much of the initial ideas and topics remained in place. Originally, my general interest was in how broader societal objectives and concerns – such as equality, welfare, democracy etc. – are integrated into policy-making related to the development and application of new technologies, often primarily seen as vehicles of economic growth. Furthermore, I was interested in this theme both at the national and urban levels. The study was thus set out to scrutinise the relationship between economic and technological goals and broader societal objectives in technology policy at the national level and in the urban economic development policies of the capital region cities. In the aftermath of the hype concerning the new economy, I was specifically interested in the role of information and communication technologies. In retrospect, many of these ideas have been analysed in two articles of this dissertation (*Pelkonen 2005; 2003a*).

New research projects that were started in the Research Group for Comparative Sociology during the dissertation work introduced new elements and issues to the initial plan. Through the OECD-initiated Monitoring and Implementing Horizontal Innovation Policy project (2003–2005), the idea of studying the interplay of the various objectives of technology policy became connected to the analysis of governance and coordination issues and problems as well as the relationship of technology policy with other policy sectors. During the project, the interest in scrutinising the governing role of the Science and Technology Policy Council of Finland arose (*Pelkonen 2006*). Furthermore, while the idea of analysing the apparently problematic relationship between technology policy and regional policy was already presented in my original research plan, the OECD project provided the final spur to take on this topic (*Häyrinen-Alestalo et al. 2006a*). Besides the projects that have 'directly' contributed to this dissertation in terms of articles based on them, during the research I have been involved in five other research projects covering partly overlapping themes: Science, Technology and Governance in Europe (funded by the Commission of the European Union 2001-2004), The Challenge of an Integrated Innovation Policy (Tekes 2005–2006), The Merging of the Federal Competencies for Education, Research, Technology and Innovation in One Federal Department (a study of Finland for a Mandate of the Swiss Science and Technology Council, funded by the University of Lausanne 2006), The Renewal of Public Services

and the Functioning of the Markets (Tekes 2006–2008), and Finnish Science Policy in International Comparison (Ministry of Education 2007–2009). The dissertation and research projects have had a two-way impact. On the one hand, these projects have been fruitful in terms of providing further research data and contacts with other researchers in Finland and abroad as well as, above all, furthering my knowledge and understanding of the issues which is, I hope, reflected in the dissertation. On the other hand, the ongoing thesis work has provided material and elements for these projects. Yet, at some points, in the middle of these various research projects and related duties, it has been difficult to differentiate the thesis from the projects and to discern what the thesis would finally consist of.

The research process has roughly followed similar phases in the studies that have led to the articles presented in this dissertation.[5] While different stages can be discerned, in practice they overlap and are tightly interconnected. As is apparent from the above discussion, the topics of the articles have emerged from my original research plan and have been related to the themes of the respective research projects. There is, however, some variation in terms of how 'directly' the choice of the objects of study has been influenced by the project in question. In three cases (articles I, III, V), the study presented has been carried out with a rather close linkage to the project while in two articles (II, IV) the link has been more distant. At the beginning of each study, I tried to familiarise myself with relevant theoretical discussions and existing literature on the topic at hand. Before collecting data, I endeavoured to operationalise the initial research problem by turning it into more approachable empirical questions. I started the data collection normally by first collecting relevant document material from various sources. An initial reading of the document material, or parts of it, is, to my mind, necessary before the start of the interviews in order to get a better understanding of the issue and to be able formulate informed interviews questions. I started the collection of interview data, and at the same time collected further document material as well as other relevant data such as speeches and statistics. At this point I often combined the data collection with further readings of previous research and theoretical literature in the search for useful theories and concepts. I normally finished collecting interview data when I felt that no new information was emerging and when most of the relevant actors had been interviewed. In some cases, further interviews were carried out at a later stage of the research if relevant new issues emerged or some aspects needed further clarification.

5 Naturally, there has been some variation between the articles in terms of the research process as well as analysis of the data. Yet I consider that the similarities are so important that it is not reasonable to describe the process of each article individually. I will, however, point to the most important differences between the articles.

Given the overlapping nature of the research phases, the analysis of the data often already starts before the whole set of data has been collected. As a matter of fact, I am inclined to think similarly to Rapley (2004, 26) that in a way analysis is always an ongoing process. This means that many choices (in terms of e.g. selection of interviewees, documents and other data sets), familiarisation with the topic, initial differentiations and classifications, formulation of interview questions etc, are carried out before the data are collected as well as during the data collection, and that all these operations, decisions and actions are an inherent part of the analysis itself. It is thus difficult to separate the analysis of data from other research phases.

In the reading and examination of the data I principally followed the idea according to which I first tried to find an interesting and applicable concept, thesis, theory or differentiation in the literature, such as the glocalisation thesis (in *Pelkonen 2005*) or the concept of policy integration (in *Pelkonen 2006*). Alternatively, if I was unable to find such a concept, I tried to develop one myself, such as the differentiation between economic and broader societal objectives (in *Pelkonen 2003a*). I then scrutinised and criticised these concepts and differentiations, and in some cases developed them further, and used them as a guide to the reading of the data. They have thus more or less strictly determined what has been looked for in the data and provided the lenses through which the data have been approached. In addition, the principle of looking for changes over time has been an important analytical idea that has been used in the articles. The concrete handling of the data took place through reading and rereading the interviews and documents, collecting relevant excerpts and their organisation and classification, keeping in mind the theoretical and conceptual ideas developed.

In the data analysis, the information provided by the interviewees has not been considered as 'facts' but rather as accounts or interpretations of events. These have been seen as valuable as such, given the expert position of the interviewees. The principle has been that factual issues were verified from sources other than interviews such as official records or statistics. For instance, the financial records of the intermediary organisations were not asked for in the interviews but were collected from official business records.

The aim has been to use the different data sets (interviews, documents, statistics, speeches and written statements) in a way that they would complement each other and thus increase the validity of the research. This has been particularly the case with respect to the two principal data sets – interviews and documents. Through expert interviews, it is often possible to retrieve such information and views that are not presented in the documents, shed light on the issues behind the documents, or specify information presented in them. Furthermore, many of the issues of this thesis, such as the commercialisation of research at universities or the operation of the Science and Technology Policy Council, could not be studied only on the

basis of information presented in documents.[6] I do not believe that such data triangulation would lead to a 'true' account of the state of affairs as such, but rather that it can add accuracy and depth to the study (cf. Silverman 2006, 292). The importance of the two main data sets also varies between the articles. In those parts of the studies which have focused on policy guidelines and changes therein, documents have provided the principal source of data, and interviews have been used to complement the picture in terms of the background of the guidelines and documents, for instance. In those parts of the studies which concentrate on the analysis of institutions and organisations related to the policy (e.g. the Science and Technology Policy Council, technopoles, universities, intermediary organisations, the Centre of Expertise Programme), interviews have had a more pronounced role as a source of data.

After these initial analyses, I wrote the first manuscripts of the articles, either in the form of conference or seminar papers or as case studies or working papers for the respective research projects. I normally received comments and feedback at this stage from my supervisor and our research group, and also from scientific conferences, workshops related to the projects, post-graduate seminars at the Department of Sociology and in the Finnish Post-Graduate School in Science and Technology Studies (TITEKO) as well as from individual colleagues. On the basis of the comments, I developed a new version of the paper. After a varying number of rounds of comments and rewriting, I submitted the article to a selected scientific journal in which it went through the normal peer-review procedure.

Concerning the validity of the research, this scientific commenting and feedback has been essential. In addition to this, in two studies (*Pelkonen 2006*; *2003b*) persons belonging to the studied organisations have read the manuscripts and commented on them. Such respondent validation has been useful in the sense that it provided me with an opportunity to talk about the research and its findings again with relevant persons, and in some respects made me rethink some of my interpretations. However, I would not think that respondent validation would form a way to ultimately 'verify' the interpretations, but rather I see it as an opportunity to get feedback and as a source of new data (Silverman 2000, 177). Furthermore, in the meetings related to the research projects as well as in many policy-oriented workshops, seminars and conferences, more or less continuous discussions have been going on with policy-makers relevant to the study, which has provided feedback from a more practical point of view.

6 I believe that the study concerning the role and operation of the Science and Technology Policy Council (*Pelkonen 2006*) could have benefited from data generated through observation of the Council's meetings. Yet, such data was not collected as it would probably have been difficult to gain access to the meetings and the interview and document data already provided good insight into the Council's work.

Having introduced the contents and research questions of my original studies as well as the data and methods that have been used, I will now move on to present the discussion on competition states and entrepreneurial regions to which I intend to relate my research studies in this summary article.

3 The emergence of competition states and entrepreneurial regions – the theses

A central change related to globalisation seems to be that states as well as cities and regions have become increasingly concerned with their economic competitiveness. Fougner (2006) has provided an illuminating analysis of how competitiveness emerged as a governmental problem and how the meaning of the term has been transformed. He argues that in the late 1970s and early 1980s competitiveness moved from the sphere of business management to become a topical issue for policy-makers and governments, first in the US and then spreading to countries in Western Europe. At this point, the world economy was mainly considered to be 'inter-national' – consisting of relatively autonomous national economies and corporations and with capital being generally 'nationally embedded'. Although states became increasingly concerned with competitiveness, firms remained the central subjects of competition. The problem facing the state authorities was how could they enhance the ability of 'national' firms to compete with foreign enterprises, in particular those firms orientated towards exports. Thus as international competitiveness became a governmental problem, it helped to "gear state policies towards the perceived needs and well-being of national firms with an international orientation" (ibid. 172). Since the 1980s however, the internationalist conception of the world economy has gradually been replaced by a globalised one in which corporations and capital are more generally 'globally footloose'. Accordingly, the meaning of the concept of competitiveness has come to be conceived in terms of attractiveness. This highlights the capacity of states and regions to compete with other states and regions for investment capital, thus emphasising *national* and *regional* competitiveness (Ylä-Anttila 1998). According to Fougner, this implies that states have increasingly become subjects of competition. In this development, it is not essential whether the conception of a globalised world economy is 'correct' but rather the extent to which various actors have come to think and act accordingly.

Although competitiveness – understood increasingly as attractiveness – can be seen to constitute a growing concern for states and regions alike, there is less unanimity concerning the consequences of this shift. With respect to cities and regions, urban policies have been seen to employ an entrepreneurial mode as a response to intensified interurban competition. The rise of urban entrepreneurialism, in broad terms, refers to an intensification of the proactive promotion of local economic development by urban and regional administrations in cooperation with private sector actors (e.g.

Hubbard & Hall 1998; Harvey 1989). As regards the state, some have argued that global competition would substantially limit states' powers and capacities and would engage them in a 'race to the bottom' involving cuts in corporate taxation and reductions in welfare provision and public spending in order to keep firms and capital in their territories (e.g. Scholte 1997; Strange 1996; for overviews of the discussion, see e.g. Weiss 2003; McGrew 1998). This would refer to a convergence of various states' policies towards a neoliberal model. In contrast to this globalist view, states' adaptation to the new conditions can also be considered in more moderate terms. Linda Weiss (2003), for instance, argues that globalisation contains not only a constraining but also an enabling dimension. On the one hand, this implies that as globalisation increases insecurity among various segments of the population, it raises the demand for social protection and thus political incentives for developing stronger social policies. On the other, global competition increases firms' need to gain access to "national innovation infrastructures, to a constant supply of skilled labour and to various other infrastructural resources that firms depend on" (ibid. 17). Hence, according to Weiss, governments have many incentives to develop such infrastructure instead of reducing corporate taxes and shifting the tax burden from capital to labour. This view emphasises that governments have room to manoeuvre in developing policies despite the constraints of globalisation.

The debate on the competition state can be seen as representing such a 'transformist' perspective on the changing role and nature of the state. In this respect, it can be seen as an attempt to conceptualise the way states respond to the challenges of globalisation, such as the growing integration of markets, transnationalisation of the economy, growing capital mobility and accelerating rate of technological change. There is not, however, a generally agreed definition of the competition state; rather some variation exists between the conceptualisations. (For different definitions, see e.g. Brenner 2004; Jessop 2002; Palan 1998; Cerny 1997; Palan & Abbot 1996; Dicken 1994.) However, all theorists of the competition state emphasise that states and governments retain a central role despite the pressures of globalisation. They stress states' adaptation to the new conditions but point out that states themselves are transforming in this process. In the process of adaptation, however, the pursuit of economic growth and competitive advantage assumes an increasingly important position in governments' agendas. Yet, there is some variation among scholars with respect to whether and to what degree this is considered to happen at the expense of welfare goals. In addition, a common feature of the competition state is the shift in economic policies from demand-side policies towards supply-side measures that focus on providing the conditions for generating growth. Furthermore, given the pervasive significance of the goal of competitiveness, there would be an increasing integration of a broad range of policies within an overall national competitive strategy (Palan 1998).

I have chosen two central variants of the competition state thesis – Bob Jessop's discussion on Schumpeterian competition states and Neil Brenner's analysis of rescaled competition state regimes – as my principal frames of reference for this summary article.[7] There have been several reasons for choosing these two accounts. First, and most importantly, both theses differ from most other discussions concerning the rise of competition states and entrepreneurialism in more general terms in that they integrate the analysis of policy changes at the national level and those at regional and urban levels within a single framework. Since the examination of the rise of competitiveness policies on both of these levels has been a central dimension in my original studies, this aspect is also crucial in this summary article. Second, as I will show below, Jessop's and Brenner's accounts overlap in several respects and also complement each other in an important way. Third, these accounts have been widely debated, but thus far they have not been properly discussed with respect to developments in Finland. There have been, however, some incidental references to Jessop's thesis in Finnish academic discussion. Heiskala (2006, 24, 35) sees many similarities between Jessop's analysis and Finnish developments in the 1980s and 1990s but does not analyse the developments in different policy sectors in specific terms. Saari (2006b, 95–96), on the other hand, considers that the thesis' high level of abstraction hampers its empirical testing since it does not uncover institutional differences between countries. Brenner's analysis has, to my knowledge, been discussed with respect to Finland and the Helsinki region only in my own article (*Pelkonen 2005*).[8] Hence they provide an interesting angle for specifying recent changes in Finnish policies at the national level and in the Helsinki region.

7 Both Jessop's and Brenner's work represent the regulation approach to the study of political economy and state restucturing. As a whole, the regulation theory is concerned with how capitalism is able to overcome its inherent crises and maintain a hegemonic position as a form of socio-economic organisation (Purcell 2002). The key concepts of the regulation approach are mode of regulation, regime of accumulation and mode of development. Yet, rather than a clearly bounded school of thought, the regulation approach is a vast and diverse body of work with different orientations (see Jessop & Sum 2006). Brenner and Jessop represent that part of recent regulationist thinking that focuses on the role of the state. I have not conducted my original studies from a regulationist perspective nor commit myself to this approach in this summary article. Rather my aim is to reflect my own results in the light of Jessop's and Brenner's conclusions.

8 There is an ongoing PhD thesis research which applies Brenner's framework to the analysis of welfare state restructuring in Sweden and Finland (see Scarpa 2008).

From Keynesian welfare states to Schumpeterian competition states

According to Bob Jessop's (2002) analysis of state adaptation, the welfare state model that was developed between the 1950s and 1970s in Western countries poorly fits the globalised economy emphasising openness and innovations and is therefore under transformation. For Jessop (2002, 58–61), the post-World War II welfare state model can be described as a Keynesian welfare national state.[9] In this respect, Jessop's main reference countries are the USA, Canada, North-western Europe, Australia and New Zealand.

In terms of economic policy, the welfare state was *Keynesian* in that it aimed to secure full employment in a relatively closed national economy with demand-side management and the building of infrastructure to support mass production and mass consumption as primary means. In Keynesian economic policies, the short-term stability of the economy was a central objective which was achieved through the active regulation of public sector spending and incomes (cf. Böckerman 2008). In terms of social reproduction, it was oriented towards *welfare,* as it tried to generalise the norms of mass consumption through state measures and collective bargaining so that all citizens could share the fruits of economic growth. Furthermore, welfare services and rights to their use were expanded to cover wider parts of the population. The Keynesian welfare state was primarily *national* in the sense that it was the national territorial state that assumed the main responsibility for developing welfare policies on different scales. Vis-à-vis regional and urban levels, the nation state's primary aim was to equalise economic and social conditions. Furthermore, the model was *statist*, in the sense that state institutions were the main complement to market forces. This implied that if markets were unable to produce expected values of economic growth, equal regional development, full employment and a socially just distribution of wealth, the state was expected to compensate for these failures and to even out prosperity for all citizens.

According to Jessop, this model has been subjected to changes and crises since the 1970s which have tended to produce a new welfare regime and state form. The reasons for this transition are manifold, relating primarily to economic developments but also including political and social issues (Torfing 1999). Economic factors are linked to the increasing globalisation of the world economy which started to undermine the relative closure of national economies, the rise of new technologies and the paradigm shift from Fordism to post-Fordism. The latter transformation refers to a change from a model of economic growth based on mass production, economies of scale and mass consumption to one founded on flexible production,

9 The description of the shift from Keynesian welfare national state to Schumpeterian postnational competition regime draws extensively on Jessop (2002).

economies of scope and specialised consumption. The political reasons relate to fiscal crises of the state and a growing political resistance to taxation. Social developments include the 'denationalisation' of civil society as well as the growing rejection of the commitment to class-based egalitarianism and accompanying class-based redistributive politics. The outcome of and response to these crisis-tendencies are, however, not straightforward, but mediated through discursive struggles between various actors and alternative strategies (Jessop 2002, 81–94).

Schumpeterian competition states

Jessop labels the emerging state model as a Schumpeterian competition state, or more precisely as a Schumpeterian workfare postnational regime. The main aim of the competition state is to secure economic growth within its borders "by promoting the economic and extra-economic conditions that are currently deemed vital for success in competition with economic actors and spaces located in other states" (Jessop 2002, 96). In terms of economic policy, it is *Schumpeterian* in the sense that it is chiefly concerned with technological change, innovation and enterprises. It aims to promote 'permanent innovation' and flexibility in relatively open economies and to strengthen the structural or systemic competitiveness of the relevant economic spaces.[10] Instead of demand management, the competition state focuses on intervening through the supply-side of the market, in particular through building infrastructure that promotes a knowledge-based economy. A Schumpeterian view of the economy emphasises the role of entrepreneurs and is strongly supply-driven while demand is considered to have a minor role in economic development (Böckerman 2008). Economic fluctuations are seen as beneficial for the economy as a whole and the state should not work actively to level them out. In Jessop's view of Schumpeterian economic policy, the knowledge-based economy acts as a primary organising concept for divergent state projects and strategies. In particular, such policies increasingly

10 Jessop maintains that competitiveness is currently increasingly understood as systemic or structural competitiveness, the latter term originating from the OECD in the mid-1980s. While competitiveness was previously seen more in terms of such issues as national factors of production, relative costs, prices and the need to develop large markets and economies of scale, the discourses and strategies of structural and systemic competitiveness have broadened the scope to involve a much larger range of issues. Accordingly, competitiveness has started to involve not only firm- and sectoral-level economic factors but also a range of non-economic "institutional contexts and sociocultural conditions in which economic actors compete" (Jessop 2002, 109, 132, 281). The economic competitiveness of advanced economies is thus increasingly seen to depend on extra-economic factors (social, cultural, environmental). This leads to substantial expansion of the economic sphere as many issues that were previously considered non-economic are now seen as directly economically relevant (ibid.; also Torfing 1999, 376–377). This holds also for the 'competitiveness' of cities and regions, for instance, which is often interpreted to depend on issues like trust, capacities for collective learning, local services and culture.

emphasise the development of innovation systems, the strengthening of competition policy and a broad understanding of the elements that influence innovation and competitiveness. Finland presents an interesting case in this respect due to its rapid ICT-driven transformation into a high technology-based economy during the 1990s and its subsequent success in international competitiveness rankings. This has been accompanied by an explicit attempt to create a state strategy based on knowledge and knowhow in which technology policy has first been substantially strengthened and then developed towards innovation policy. The shift towards a broader innovation policy, however, presents problems, for instance in terms of horizontal coordination as well as integration of broader social objectives and public participation (*Pelkonen 2006; 2003a*).

The concept of the knowledge-based economy is central in Jessop's analysis. He considers it as a hegemonic "rationale and strategic guide for economic, political and social restructuring" having broad repercussions across different societal spheres and systems (Jessop 2002, 97; 2005a, 152–154). Still, while reflecting the undeniable significance of knowledge as a factor of production, the knowledge-based economy is a fuzzy and heterogeneous notion that lacks a single and widely accepted definition. In terms of its scope, for instance, Van Winden et al. (2007) make a distinction between two perspectives. On the one hand, the knowledge-based economy tends to refer to a separate, 'top section' of the economy in which new (technological) knowledge is created. On the other, it can be considered as a broader perspective in which knowledge is becoming a more dominant factor throughout the economy. As a matter of fact, during the last decades parallel discussions with somewhat different emphases have been going on under various headings, such as the post-industrial economy, network economy, learning economy, information economy etc. According to Godin (2006) the knowledge-based economy concept builds particularly on the early knowledge economy concept the emergence of which in the 1960s was supported by actual new trends and data referring to the increasing importance of knowledge as an economic resource. In the 1990s it re-emerged as a policy-oriented concept while there was no evidence of changes in terms of the centrality of knowledge in the economy (ibid). In a similar vein, Jessop emphasises the emergence and current centrality of the knowledge-based economy as a 'master narrative' and meta-objective that widely informs and shapes political strategies across countries and scales.

With respect to social policy, Jessop's competition state is a *workfare* regime as it subordinates social policy to the demands of economic policy and focuses on promoting flexibility and employability in the labour market. While previously the state's aim was to extend the social rights of its citizens, the competition state is more concerned with providing welfare services that benefit business development. Workfare is also associated with restrictions on public spending. It thus refers to a major reorientation in social policy "from

redistributive concerns based on expanding welfare rights in a national state towards more productivist and cost-saving concerns in an open economy" (Jessop 2002, 258). These policies tend to promote rather than decrease inequality and accelerate uneven regional development. As regards labour markets, the key feature is the emphasis put on encouraging or enforcing work through active forms of employment policy. In these activation policies, unemployment benefits are increasingly linked to work, training and other programmes that are directed at helping the unemployed move back into employment. While Finland has traditionally been considered as one of the Nordic welfare states, adjustments have taken place in welfare policies during the 1990s and later. At the same time, social inequalities have increased (e.g. Julkunen 2001; Taimio 2007) and regional differences have grown substantially (*Häyrinen-Alestalo et al. 2006a; Pelkonen 2005*). The question could therefore be posed of to what degree has the promotion of the knowledge-based economy surpassed the building of the welfare state (Pelkonen 2004). As labour policy and labour markets have not been objects of research in my original studies, I will not include these issues in the analysis in this summary article. In this respect, I will just point out that many studies indicate that flexibility has substantially increased in the labour market during the 1990s and 2000s (Asplund 2003) and labour policy has aimed increasingly at influencing the labour force supply, promoting professional and territorial mobility of labour and paying attention to 'labour market capabilities', such as work motivation and professional skills (Sihto 2006; cf. Häyrinen-Alestalo et al. 2006b).

In contrast to the earlier primacy of the national scale, the competition state can be regarded as *post-national*. This refers to the 'relativisation of scale', i.e. increased significance of other spatial scales[11] (e.g. local, urban, regional, global) which make the national economy less adequate for macroeconomic management and the national territory less important as a locus of power. At the same time, new scales of organisation are also emerging and all this leads to an increasing complexity between scales. For Jessop (2002, 180), scales are interrelated in "increasingly complex tangled hierarchies rather than being simply nested one within the other". Examples of these new formations

11 The concept of geographical scale has been defined in multiple ways in the recent literature. Basically, it can be seen to refer to the spatial extent of a phenomenon. Currently, geographical scales are increasingly considered as the product of economic, political and social activities, rather than pregiven categories. As Marston (2000, 220) put it, "scale is not necessarily a preordained hierarchical framework for ordering the world – local, regional, national and global. It is instead a contingent outcome of the tensions that exist between structural forces and the practices of human agents". According to Swyngedow (1997, 140), scale is "the arena and moment, both discursively and materially, where socio-spatial power relations are contested and compromises are negotiated and regulated". Thus not only the global, national, regional, urban or local could be defined as scales but also various other spatial configurations.

and scales include the emerging network of global cities, the growth of cross-border economic regions as well as the increasing importance of supranational growth poles, triads, in the global economy.

With respect to the nation state, these changes are associated with the transfer of state policy-making functions upwards to international organisations (such as the EU, OECD, World Bank, and ILO) and downwards to regional and local scales (Jessop 2002, 195–198; Jessop 2005b). In Finland, upward rescaling has occurred through economic integration and in particular through membership in the European Union in 1995. These have implied that parts of political decision-making power were transferred to the supranational level and that the national economy has been more firmly integrated into the international economy (*Pelkonen 2005*). European, international and global levels have gained more weight in Finnish political decision-making and have become increasingly important reference points for national policies. This has taken place throughout the policy sectors, but has perhaps been most visible in economic policy in which autonomy for formulating distinctively national policies has been substantially decreased (Böckerman & Kiander 2006; for implications in science and technology policy, see Hakala 2003).

Downward rescaling, on the other hand, has not been that pronounced due to the tradition of strong municipal autonomy in Finland. During the 1990s, however, there was an emphasis on transferring decision-making power from the central state level to regional and local levels, rationalising and streamlining state regional administration as well as increasing regional responsibility and authority in planning and decision-making in regional development (*Pelkonen 2005*). In terms of state administration in the regions, 15 Employment and Economic Development Centres were established in 1997 in order to strengthen regional employment and industrial policies. With respect to regional self-government, Regional Councils were created in 1995 with particular responsibility in terms of regional development and planning. The councils have, however, remained politically relatively weak as they have no important regulatory power and no power to levy taxes (Haveri 2003). During the early 2000s, some decision-making functions were further transferred from ministries to regional state administration (Ministry of the Interior 2005) and this trend will be continued during the term of office of the current government (Cabinet programme 2007). Overall, the intermediate regional level of administration has, however, remained rather weak, and – despite municipal autonomy – the state is strong with respect to cities and municipalities. It has, for instance, been able to regulate municipalities' economic conditions through changes in corporate taxation (*Pelkonen 2005*) and by allocating to them new tasks in terms of public services while not necessarily providing sufficient funding for the new functions. Consequently, various cities and municipalities have had trouble providing the statutory welfare services for their inhabitants (*Häyrinen-Alestalo et al. 2006a*).

The relativisation of scale is particularly manifested in the growing importance of the urban scale. In this respect, Jessop argues that many cities turn 'entrepreneurial' as the goal of maintaining and enhancing economic competitiveness vis-à-vis other cities becomes increasingly important. Thus the aim of the entrepreneurial city is to secure "the most advantageous insertion into the changing interscalar division of labour in the world economy" (Jessop & Sum 2000, 2295). In this respect, an entrepreneurial city focuses on creating local differences to capture and embed mobile capital and applies various kinds of (scale-based) strategies. These are intended to promote an entrepreneurial environment on a variety of scales and to enhance local growth, but often also to limit competition within a region. The strategies range from 'pure' resource procurement and place marketing to the building of linkages across scales, both horizontally on the same scale as well as transversely by bypassing neighbouring scales (Jessop 2002, 190–192). The Finnish capital region cities' policy transformation from rather passive and indifferent economic development policies towards active urban competitiveness policies during the last decades presents an interesting example in this respect (*Pelkonen 2005*).

Finally, by using the term *regime* to refer to the emerging mode of policy-making, Jessop emphasises the increased importance of non-state mechanisms in compensating for market failures and in delivering public policies. It implies the growing significance of various public-private networks and partnerships in state activities. I have not focused on this aspect in my original articles and I will not examine it in the present summary article. The central differences between the welfare state and the competition state in Jessop's analysis are summed up in Table 3 below.

Table 3. Key characteristics of the Keynesian welfare state and the Schumpeterian competition state (adapted from Jessop 2002, 59, 252).

	Keynesian welfare state	Schumpeterian competition state
Characteristics of economic policy	Full employment, demand management, provision of infrastructure to support mass production and consumption.	Focuses on innovation and competitiveness in open economies. Increasing emphasis on supply of infrastructure that supports the knowledge-based economy.
Characteristics of social policy	Collective bargaining and the state aim to generalise norms of mass consumption. Expansion of welfare rights.	Subordinates social policy to an expanded notion of economic policy; restriction of welfare rights. Increase in inequality and uneven regional development.
Primary scale	Relative primacy of the national scale in economic and social policy-making. Collaboration between the state and regional level.	Relativisation of scale at the expense of the national scale. Competition to establish a new primary scale, but continued importance of the nation state in a nodal role between scales. Growing importance of the urban scale and rise of entrepreneurial cities.
Primary means to compensate for market failures	Market and state form a 'mixed economy' The state is expected to compensate for market failures.	Increased importance of self-organising governance in correcting market and state failures. The state's role focuses increasingly on coordination of activities instead of performing them.

Variations in competition state strategies

In practice, however, states may pursue very divergent strategies in adapting to the changing environment and in promoting conditions of economic growth and social welfare (e.g. Scharpf & Smith 2000). Campbell (2003) has argued that states have various means to mediate the impacts of globalisation, and the role of nationally specific institutions and their path-dependency is particularly important here. States can thus resist a convergence towards market-oriented and neoliberal policies. Similarly, Palan and Abbott (1996) emphasise the diversity of the ways in which the competition state may be embedded in different nation states and realised through divergent strategies. Jessop (2002, 259–267; Jessop & Sum 2006, 111–115), for his part, distinguishes four types of Schumpeterian competition states: neoliberal, neocorporatist, neostatist and neocommunitarian. He underlines the fact that these variants are ideal-typical – as is the construction of the competition state itself – and are unlikely to be found in pure form. Rather, they appear in the form of different strategy mixes the composition of which depends on "institutional legacies, the balance of political forces and the changing economic and political conjunctures in which different strategies are pursued" (ibid. 259).

Like many other researchers, Jessop sees *neoliberalism* as a hegemonic strategy for economic globalisation. Neoliberal strategy promotes a market-led transition involving privatisation, liberalisation and the setting of commercial criteria in the public sector. It includes deregulation and a general reorientation of economic and social policies to the needs of the private sector. *Neocorporatism*, on the other hand, refers to the institutionalisation of a "continuing, negotiated and concerted approach" to economic decisions, strategies and policies (Jessop 2002, 261). Based on collective agreements that bring stability to the economy, neocorporatism aims to balance competition and cooperation. Jessop considers that in the competition state, neocorporatist arrangements will move towards the micro level of firms and localities at the expense of a centralised macroeconomic approach.

Neostatism refers to an 'active state' which uses its resources to restructure declining industries and to promote new, promising sectors. These activities aim to move the domestic economy up the technological hierarchy by creating a competitive productive base and specialising in specific high tech sectors. This strategy includes an active structural policy in which "the state sets strategic targets relating to new technologies, technology transfer, innovation systems, infrastructure and other factors affecting the overall structural competitiveness of the emerging knowledge-based economy" (Jessop 2002, 263). Another core element is an active territorial strategy in which efforts are made to promote the development of successful innovation milieus, industrial clusters, entrepreneurial cities and learning regions at the regional and local level. Finally, *neocommunitarianism* represents an

opposing movement as it objects to the extension of capitalist logic to other spheres of life such as education and health services.

Reflections on Jessop's thesis

Jessop's work provides an insightful analysis of state transformation and the rise of urban entrepreneurialism during the last decades. His approach is particularly strong in bringing broad structural and technological changes within a single analytical framework. His analysis is holistic also in the sense that he focuses on various sectors of state activity. Thus, in contrast to some welfare state studies, Jessop's focus is not merely on the changes in social policies, but also on economic policy, state territoriality and shifts in the modes of policy-making from government towards governance. The problems of Jessop's analysis, however, are related to this holistic approach and lie in its high level of abstraction and in the very general nature in which he observes the characteristics of the competition state and the entrepreneurial city. This leaves very much room for national variation as well as varying interpretations and tends to diminish its value as a frame of analysis. It is characteristic of Jessop's approach that concrete examples are provided rather rarely and examples that are presented often relate to the European Union. Jessop's most recent work, however, includes more country-specific examples (Jessop & Sum 2006).

A central deficiency in Jessop's analysis is that it does not pay proper attention to the internal variation between competition states (as well as differences between entrepreneurial cities), which is undoubtedly significant. The introduction of the four variants of the competition state (neoliberal, neocorporatist, neostatist and neocommunitarian) and their combinations is, however, an important step in this direction. It also differentiates Jessop's account from a mere critique of the neoliberal state. On the other hand, some, like Hay (2004), have considered the neoliberalisation thesis as a more adequate description of state transformation. Their criticism is that Jessop's analysis is apolitical and agentless and that the neoliberalisation thesis would provide a more political and actor-centred perspective. However, to my mind, the rise of neoliberalism is firmly integrated in Jessop's perspective and his view is far broader than the one that the neoliberalisation thesis alone provides.

Jessop's account has been applied to country cases, such as Denmark (Torfing 1999), the UK (Greener 2004) and the Czech Republic, Poland, Hungary and Slovakia (Drahokoupil 2007; 2006). In a looser manner, it has also been discussed with respect to Ireland (Kirby 2004), Scandinavian countries (Benner 2003; also Benner & Löfgren 2007) and the European Union (Borrás 2003; Heeg & Ossenbrügge 2002). Many of these studies take an affirmative stand towards Jessop's thesis of the competition state in several respects. In terms of health policy in the UK for instance, there seem to be clear tendencies in the direction of each of the four categories

(Greener 2004, 241). Similarly, according to Kirby's (2004) analysis, Ireland seems to have transformed towards a competition state in which the social dimension has largely been subordinated to economic aspects.

Some authors are, however, more critical of certain aspects of Jessop's description. In the Danish case, for instance, shifts towards Schumpeterian economic policy and workfarism are considered to be clear while shifts towards postnational and regime are seen as not "fully accomplished" (Torfing 1999, 381). With respect to the countries in East-central Europe, what seems to be emerging is a *Porterian* workfare postnational regime. Accordingly, the central feature of economic policy in these countries is not Schumpeterian in the sense that it would place the central emphasis on innovation. Rather, the primary goal in economic policy seems to be to attract investment from abroad – following the ideas of Michael Porter (Drahokoupil 2007; 2006). Furthermore, many countries that seem to fit into Jessop's framework do so only at a very general level. The question concerning the amount of variation between the ideal-typical model of the competition state and 'real cases' is a vital touchstone for the adequacy of Jessop's thesis (cf. Hay 2004). More specific country studies are clearly needed to shed further light on its empirical validity.

Interestingly, Jessop (2002, 137) considers Finland, together with the US, Germany and Third Italy[12], as the most prominent examples of the Schumpeterian competition state. However, any particular empirical evidence or references are not provided with respect to Finland. In another occasion, Jessop (2005a, 155) – in passing – takes Finland as an example of a neocorporatist competition state, in contrast to the neoliberal USA. Yet, as will be discussed below, it seems clear that Finland does not represent a purely neocorporatist model but combines different strategies. In this respect, both neostatist strategies and market-oriented approaches are relevant to the Finnish experience (e.g. *Pelkonen 2005*; *2003a*).

In Jessop's four-dimensional account of the competition state, I find the postnational dimension particularly vague. In this respect, Jessop's discussion differs from the two dimensions concerning economic and social policies in that he does not focus on the substantial changes in state policies along the shift towards the competition state. Rather, his focus is more theoretical, concentrating on the reconfiguration of scales but not on how states change their regional policies as scales are being reorganised. Although he makes a reference to the increasing state concern over improving "the competitiveness of regional and local economies in the global economy" (Jessop 2002, 197), he does not pay attention to the changing state policies with respect to territorial development. As my concern is more on policy changes and on

12 Third Italy refers to economic development and production in North-central and North-eastern Italy that differs in orientation from developed Northern Italy and underdeveloped Southern Italy.

the transformation of regional policy, I find Jessop's discussion insufficient. Jessop's analysis of the entrepreneurial city is similarly highly abstract. For the purpose of clarifying these dimensions, I will introduce Neil Brenner's analysis of the competition state which complements Jessop's view, but pays substantial attention to the transformation of the states' regional policies and analyses more closely changes at the urban level.

Rescaled competition state regimes

Neil Brenner (e.g. 2004; 2003; 1998) has analysed the processes of state restructuring along lines largely parallel to Jessop. He argues that during the last three decades the Western European welfare states have been transformed into what he provisionally labels "rescaled competition state regimes". Following Jessop, Brenner (2004, 172–178, 260) defines the emerging state form as a *competition state* because of the state's prioritisation of the objective of economic competitiveness over welfare goals, such as equity and redistribution. In contrast to the redistributive concerns of the welfare state, the competition state focuses on promoting economic regeneration by enhancing the global competitive advantages of its territory. This includes its major firms, labour force, technological infrastructure and the most important regions. In contrast to Jessop's analysis, however, Brenner (2004, 260) uses the notion of *regime* to refer – not to the increasing role of self-organising governance networks – but to the still unsteady character of the emerging competition states. He sees them as "institutionally and geographically" unstable rather than as fully consolidated, internally coherent state forms.

The core of Brenner's analysis focuses on the changes in the regional dimension and state territorial structure and in this respect he labels the state as *rescaled*. This largely corresponds to Jessop's discussion of the 'relativisation of scale', but Brenner develops it further, discusses it more fully and focuses more concretely on changes in state regional policy (cf. Cerny 2006). For Brenner (2004, 177, 260), rescaling refers to the prioritisation of 'scale-sensitive' political strategies that aim at optimally situating central subnational spaces (localities, cities, regions, industrial districts) within supranational (European or global) spatial divisions of labour and circuits of capital accumulation. Ultimately, this implies that the promotion of the global competitiveness of cities and regions becomes a primary goal of the state. In this perspective, rescaling is seen as a neoliberal state strategy to enable new forms of capital mobility at the supranational level and to foster the competitive edge of subnational growth regions at the national level. In contrast to Jessop, Brenner (2004, 260) also emphasises that rescaling does not only entail upscaling and downscaling of political power but also includes governmental attempts to set up "competitive relations between

subnational administrative units as a means to position local and regional economies strategically within supranational circuits of capital".

Brenner calls these entrepreneurial, growth-oriented and competitiveness-driven state initiatives *urban locational policies*. In this framework, national governments see the most globally integrated cities and regions as key motors of national economic growth and thus prioritise them in national policies. Accordingly, he argues that since the 1980s the focus of state regional policies has shifted away from the traditional priority of promoting national or regional redistribution towards enhancement of the global competitiveness of major cities and the most strategic city-regions. These policies have been 'aggressively' mobilised by national, regional and local state institutions throughout Western Europe resulting in the intensification of uneven regional development. National regional differences have increasingly been "reinterpreted as unavoidable preconditions and consequences of market-driven growth rather than being seen as regulatory problems in their own right" (Brenner 2004, 169). Like Jessop, Brenner (2004, 173) discerns variants of the emerging state form. He distinguishes between *neoliberal* initiatives, which primarily focus on dissolving constraints on capital accumulation, and *social democratic* initiatives which are intended to promote industrialisation in a way in which the priorities of profitability and social equity are balanced. Labelling the latter approach as social democratic, however, seems insensitive to recent developments in which social democratic parties have given way to increasingly market-oriented policies in several countries, ranging from the UK and Germany to the Scandinavian countries (e.g. Giddens 2000). Although the position of the Finnish Social Democratic Party towards welfare policy has remained positive in the party's election programmes, market-type solutions became a part of its welfare ideology in the early 1990s (Nygård 2006). In practice, governments led by the Social Democrats implemented market-oriented policies in Finland in the latter half of the 1990s (Julkunen 2001).

Globalisation of cities and the rise of counter-tendencies to urban locational policies

For Brenner, the reverse side of state rescaling and the rise of urban locational policy is that the major urban regions and cities are globalising. This implies that they are no longer strictly enclosed within the national economies but are more directly embedded in and operate as nodes within trans-state urban hierarchies and inter-urban networks (Brenner 1998). Although the globalisation of cities has often been described by using paradigmatic examples (such as New York, London and Tokyo), Brenner sees it as a more general process by which national centres of production and consumption are being connected to a global network, while simultaneously downplaying the connections to their hinterlands. In Europe, through the increasing importance of neoliberal policies, and particularly the removal of barriers to

trade and investment, competition between cities and regions has significantly intensified. Cities have been considered as increasingly competitive agents and the growth in major urban areas has been disconnected from the growth of national economies (Brenner 2004, 201).[13]

In his analysis, Brenner underlines the compatibility of state policies and urban strategies for enhancing economic growth. While Jessop (2002, 186) refers to this aspect by pointing to the growing role of some leading cities as state promoted 'national champions', Brenner stresses that state rescaling and urban locational policies are inherently intended to promote the competitiveness of a few core urban regions. In many instances, the states' urban locational policies and cities' strivings for globalisation come together, for example in various local mega-projects. Such efforts strengthen the capacity to attract transnational investments to selected urban locations, thus promoting the development of 'new state spaces'. In the Helsinki region – as well as in Finland as a whole – the insignificance of foreign investments has been a central problem as well as a cause of constant concern for policy-makers (e.g. Prime Minister's Office 2004). It is also one of the rather rare factors that weaken Finland's position in the indicators of competitiveness and the knowledge-based economy (Häyrinen-Alestalo et al. 2005).

Brenner argues, however, that the 1990s witnessed various kinds of counter-tendencies to the states' urban locational policies at the urban scale. These tendencies imply further rescaling of urban policy and aim to reintegrate the perspective of territorial cohesion into the discussion of urban and regional development. This relates to the fact that while urban locational policies have strongly promoted economic development capacities, at the same time they have contributed to a variety of detrimental trends on regional and urban scales. These include intensifying uneven spatial development and inefficient allocation of public resources. As a matter of fact, Brenner argues that there is only little evidence of the benefits of urban locational policies for local economies. To the contrary, there are signs that they have led to a search for short-term economic gains at the expense of longer-term investments in the cities and to the birth of high technology-based, globally connected urban enclaves which generate only

13 The interpretation of cities as competitive actors is, however, not self-evident. Some, like economist Paul Krugman, have been critical of the term competitiveness with respect to territorial units such as states and cities, arguing that the concept can only be related to companies. Yet, the increase in competition between cities during the last two decades has been widely noted in research literature (see e.g. Begg 1999). A direct illustration of spatial competition is the situation in which firms subject cities to mutual competition over the location of the firms' activities (for a recent example from Finland, see Lovio et al. 2006, 10–11). Similarly, there is a vast amount research showing how both urban and national policy-makers across western Europe have been increasingly involved in promoting such elements of cities that are considered to enhance their 'competitiveness' vis-à-vis other locations (Brenner 2004, 207–208).

limited positive implications for their surrounding territories (Brenner 2004, 262–265). The counter-tendencies that have emerged as a response to these trends include metropolitan reform initiatives, interurban networking initiatives and neighbourhood-based anti-exclusion initiatives.

Of these counter-tendencies, the metropolitan reform initiatives are particularly relevant to the substance of this summary article as they directly deal with initiatives and strategies in metropolitan areas similar to the Helsinki region (cf. *Pelkonen 2005*; Pelkonen 2003c). Brenner (2004) argues that during the 1990s major European cities started to pay increasing attention to their broader regional environments and to develop new forms of cooperation within these urban regions. In some cases, this led to upward rescaling in terms of the installation of new metropolitan institutions in which diverse administrative, planning and regulatory competencies were regionally concentrated. In others, it led to the creation of more informal frameworks of metropolitan cooperation. What is significant in these approaches is that while they have implied joint efforts to enhance intra-regional territorial cohesion, they have been particularly oriented towards the promotion of regional economic competitiveness. In this view, territorial cohesion came to be seen as a basic precondition for regional economic competitiveness, as growing competition within the region is considered to undermine its capacity to compete for investments on supraregional scales. While principally concerned with territorial cohesion, metropolitan reform initiatives have thus primarily been applied as a means to transfer urban locational policies to the regional scale. In this respect, they are part of policies that engage cities "still more aggressively in territorial competition against other urban regions at European and global scales" (Brenner 2004, 281).

Reflections on Brenner's thesis

Compared to Jessop's analysis, Brenner's account is less holistic as he does not discuss the changes in economic and social policies or the shift from government to governance during the transformation towards the competition regime. However, with respect to the territorial and regional aspect of state restructuring, Brenner provides a more specific and less abstract analysis than Jessop. In this regard, I would say that these two perspectives nicely complement each other.

In his earlier work, Brenner (e.g. 1999; 1998) used to term the changes in state territoriality as glocalisation – and accordingly, the emerging state form as a 'glocal state' – but recently he has replaced this with the concept of rescaling. For him, the term 'glocal' risks giving the false impression that two scales, the global and the local, would dominate the contemporary rescaling processes. Rather, he now insists on the multiscalar character of rescaling in which a variety of other scales – such as urban, regional and supranational – come to play key roles. Furthermore, the term glocal/glocalising could be understood as representing a new, 'fixed' architecture of scales while the

notion of rescaling/rescaled emphasises the dynamic, fluid and open-ended character of these processes. Along rather similar lines, I have raised the critique that the term 'glocal' refers to a stagnant process, whereas there seems to be no evidence of the end of such processes (*Pelkonen 2005*).

Theoretically, Brenner's account can be criticised in other respects as well (*Pelkonen 2005*, 687–688). On the one hand, it seems that in his view the state is a rather monolithic entity. State policies are viewed as one-dimensional, as it seems that there would be only one objective or course of action. In reality state policies in different sectors may have impacts that are not parallel, but rather inconsistent or contradictory. Le Galès (2006, 720) has recently taken up a similar critique by underlining that there are, undoubtedly, several 'state strategies' at play at any given time. In this respect, Brenner seems to be insensitive to the variation that may exist within the objectives and measures of different sectors of governmental policy. This variation and the consequent need for coordination become evident when horizontal policies that cut across policy sectors are developed (Peters 1998; *Pelkonen 2006*). On the other hand, Brenner's thesis seems to be biased towards consensus-driven thinking. Hence, it does not take into account contradictions that may take place between the nation state and the regions in the course of the processes of state restructuring.

Brenner's analysis differs form Jessop's in that he provides many empirical examples to support his claims. In this respect, his main reference points are Germany, the Netherlands, the UK, Italy, France and Denmark, as well as the large metropolitan cities in these countries. He does not discuss developments in Finland but argues that state rescaling is generally an unfolding process in the EU and OECD countries. This provides an interesting set-up for discussing his thesis with respect to the developments in Finland.

Combining the theses and specifying the research question

In what follows, I will situate the results of my original studies within this broader discussion on state restructuring and urban entrepreneurialism. In doing so, my aim is to use my empirical results and considerations from Finland and the Helsinki region to comment on and specify some parts of Jessop's and Brenner's discussions. This will also provide me with an opportunity to elaborate some issues that have been taken up in the original articles. I will therefore not engage in a detailed and full-scale analysis of state restructuring in Finland along these theoretical lines, but rather highlight the results of my original studies within the framework of these theoretical constructions.

In this summary article I concentrate on those themes that I have analysed in my original studies. This has two implications with respect to the two theses presented above. First, although the policies of the welfare state have

been analysed in two of the articles (*Pelkonen 2003a*; *Häyrinen-Alestalo et al. 2006a*), my focus has been on the 'era' of the competition state, not on the welfare state. As far as I will touch on the development of the welfare state in Finland in this summary article, besides those two articles I will refer to relevant research literature. Second, concentrating on the themes of my original studies implies that two dimensions of Jessop's thesis, namely labour market policy and the state's role in compensating for market failures, will not be discussed. I will thus not 'test' or 'apply' Jessop's and Brenner's theses but more selectively discuss my results with respect to them.

In the next three sections I will focus on profiling the shift towards a competition state in Finland at the national level. In section 4, I will concentrate on the growing market orientation of state policies and the related increase in social inequality and regional differences as well as discuss the rise of the information society and knowledge-based economy as increasingly important political objectives. In the two subsequent sections I will focus more specifically on two dimensions of the competition state. First, discussing Jessop's thesis of the shift towards Schumpeterian policies for innovation, I will look at the growing role of science and technology policy as a means to promote structural economic change (section 5). Then I will move on to look at changes in the priorities and means of state regional policy and relate my discussion to Brenner's thesis on state rescaling and the rise of urban locational policies (section 6). My research questions are as follows: How adequate are Jessop's and Brenner's theses in these respects? And how and to what degree have science and technology policies and regional policy been geared towards the goal of economic competitiveness?

In section 7 I will look at the rise of urban entrepreneurialism in the Helsinki region. Concerning this, however, I consider both Jessop's and Brenner's account as flawed in one important respect: neither of them pays attention to the growing importance of universities in urban and regional economic development. In a similar way as Brenner and Jessop consider cities and urban regions as motors of the global economy, universities have generally come to be regarded as engines of regional economies (e.g. Etzkowitz & Leydesdorff 2000; Boucher et al. 2003). Through the knowledge-based economy, the economic role of universities has become increasingly important and universities are taking on a significant position in the policies that entrepreneurial cities engage in. In the Helsinki region, for instance, the rise of urban competitiveness policies has been closely linked to universities. At the same time, universities themselves are going through a transition in which they adopt entrepreneurial objectives and commercial modes of action. When discussing the characteristics of urban competitiveness policies in the capital region, I will relate my analysis to both Jessop's and Brenner's views on the rise of urban entrepreneurialism. My focus will be on questioning Brenner's view of the compatibility of state and urban policies, but I will also pay attention to his discussion of the rise of metropolitan

reform initiatives. Given the salience of the universities, I will integrate the analysis of the growing regional and economic role of universities into my discussion. In this respect, my research questions are as follows: What are the characteristics of entrepreneurial urban policies in the capital region of Finland? How have the regions' universities been integrated into these efforts and how have they engaged in the commercialisation of academic research?

4 Profiling the Finnish competition state

Finland has belonged to the group of Nordic welfare states although it has had some national peculiarities, such as being a latecomer to this development. The Nordic welfare state model has traditionally been characterised by an extensive and redistributive welfare policy in which the state has had a central role. Furthermore, broad participation in working life and relatively low unemployment have been emblematic to this model (Kosonen 1998). In Finland, the building of the welfare state can be seen as a broad project to modernise society, and has aimed at ensuring a high level of employment, increasing societal and regional equality, balancing income differences and renewing industrial and economic structures (*Pelkonen 2003a*). Particularly up until the 1970s, social and regional equality were generally considered as the central goal of the government (Heiskala & Hämäläinen 2007).

The achievements of the welfare state are undeniable in Finland: between 1945 and 1980 Finland experienced a clear transition towards better living standards and enhanced societal security (Alestalo & Uusitalo 1986). During this period, inequality in terms of income differences, access to higher education and possibilities for social mobility was considerably reduced. This was achieved by influencing income formation, through redistributive forms of taxation and transfers and by providing social services that protect against the impacts of sickness, disability and old age (ibid.). Compared to other Nordic countries, however, the level of protection provided by the Finnish state has not been as high and the social security system has been more strongly linked and limited to participation in working life. The Finnish welfare state has thus been less universalist in its orientation and it can be seen to combine features of both the Nordic universalist model and the Central European conservative model (Heiskala 2006).

With respect to Jessop's thesis, it is worth noting, however, that new technologies and competitiveness have been an inherent part of state priorities also during the building-up period of the welfare state (*Pelkonen 2003a*). The salience of competitiveness as a central concern of Finnish governments can be considered as a reflection of the politico-economic model that was consolidated in Finland after the Second World War (Kosonen 1998). As a small and open economy, Finland has been strongly dependent on the success of the export sector, and also the politico-economic model has emphasised the importance of exports and investments. The objectives related to employment and redistribution were largely subordinated to these goals. Economic competitiveness as expressed in terms of growth of production, exports and investments was prioritised, and although full employment was

considered as an important goal, it was compromised if it was in conflict with competitiveness. This means that 'economic imperatives' have always played a key role in Finnish welfare policy: public spending has been increased following tightly economic resources and directed so that it supports growth and competitiveness, in particular under economic slowdowns and recession (ibid. 121). Thus Finland has never been a Keynesian welfare state in Jessop's sense since it has not carried out clear-cut Keynesian policies. In fact, Finnish economic policy after the Second World War can be seen as representing "an extreme non-Keynesian case" (Pekkarinen 1986).

Market-oriented adjustment and the emergence of the information society as an economic strategy

Despite the prevalence of the goal of competitiveness during the building of the Finnish welfare state, there has been a shift towards market-orientation and increasing competition since the late 1980s (Häyrinen-Alestalo et al. 2005; Heiskala 2006). The economic recession of the early 1990s was a watershed but many of the political changes had already been started and the recession was partly used as a means to legitimise and carry out the decisions (Alestalo 1993). In this regard, the transformation was a deeper political-ideological change, rather than a mere reaction to the recession (see also Julkunen 2001, 60–63). At the same time, economic globalisation, European integration and rapid technological development had laid the foundations for increasingly market-and competitiveness-oriented policies. Accordingly, the governments of Holkeri (1987–1991) and Aho (1991–1995) began to put more weight on competition, promoting the functioning of the markets and spreading the logic of market forces to the public sector (*Pelkonen 2003b*). Economic efficiency, competitiveness and growth were emphasised as key governmental objectives. With respect to economic policy, this referred, among other things, to the reconsideration of the status of state-owned companies and the subsequent beginning of their commercialisation and privatisation. In terms of public services, it implied that the emphasis on the availability of services (Cabinet programme 1983) turned increasingly to stress their productivity and economic efficiency (Cabinet programmes 1987; 1991). The division of labour between public and private sectors came under reconsideration. Concepts and ways of operation were increasingly transferred from the business world to public sector programmes and strategies (Kantola 2006).

In their theses, both Jessop and Brenner bring out the neoliberal variant of the competition state. Furthermore, Jessop (2002, 159) maintains that while neoliberalism has been hegemonic in the US and other anglophone countries, more restricted neoliberal policy modifications have taken place in most advanced capitalist economies (also Harvey 2005). The development

in Finland reflects these ideas in that economic issues have clearly been given a growing prominence and more space has been provided for market mechanisms in various sectors of society. (For an overview, see Patomäki 2007.) The university sector is one example in which market orientation has been adopted (*Pelkonen 2003b;* also e.g. Häyrinen-Alestalo & Peltola 2006; Kutinlahti 2005; Tuunainen 2004). As regards public services, the introduction of the market mechanism together with a growing use of new technologies has been seen as a source of efficiency and productivity *(Pelkonen 2003a*; Julkunen 2006). However, in terms of the increasing application of the market mechanism, there remains a range of unsolved issues such as the proper functioning of the market mechanism as a model in public service provision as well as questions related to the roles and responsibilities of public and private actors (Häyrinen-Alestalo et al. 2006c).

The market-oriented approach was also reflected in the strategies and aims to develop the Finnish information society in the middle of the 1990s. At that time the information society became a large-scale programme for societal development in which economic goals and competitiveness were prioritised (*Pelkonen 2003a*). In the aftermath of the recession, the increasing use of information and communication technologies was primarily seen as a means to fulfil economic objectives. Accordingly, in governmental programmes these technologies were expected to promote the emergence of a 'network economy' which would increase productivity and create new industrial and commercial opportunities. This was expected to lead to increasing competitiveness, public sector efficiency and growth in employment (see also e.g. Tuuva-Hongisto 2007, 57–60).

Interestingly, these economic emphases diverged substantially from those that had prevailed during the previous decade (*Pelkonen 2003a*). During the 1970s and 1980s, a broad socio-political perspective on information and communication technologies had been adopted in Finland. Although economic impacts were considered important, also a wide range of societal issues and aspects were discussed, including changes related to employment, working life, administrative systems, housing and the environment. Various social objectives were related to information technologies, such as balanced regional development, enhancing citizens' access to information and promoting political participation. Furthermore, technological development was not seen as inherently positive; significant societal risks and threats were also identified and examined. These comprised increasing stressfulness of work, polarisation of working life, increasing technological vulnerability and growing bureaucratisation of society. In contrast, in the early 1990s such social concerns were largely missing in the governmental ICT and information society strategies, and if they were discussed, they were largely subordinated to economic factors.

Along with the increasing market orientation in state policies, the national economy transformed from one based on the forest and metal industries

towards high technology sectors during the 1990s. This transformation was strongly linked to the rise and success of the ICT cluster, and Nokia in particular. At the same time, following Jessop's characterisation, the knowledge-based economy began to serve as a general framework or metaobjective in political programmes (*Pelkonen 2003a*) referring to an economy based on new technologies, a high level of knowhow and innovativeness (e.g. Science and Technology Policy Council 1996). Similarly, the breakthrough of the knowledge-based economy as a framework for economic and political strategies has taken place also on regional and urban scales (cf. Jessop 2005a, 152), as various Finnish cities and regions have strived to embrace the model of knowledge-based growth. The Helsinki region in the south (*Pelkonen 2005*) and Oulu in Northern Finland (Tervo 2004) are the most prominent examples, but also a wide range of other cities and regions tend to identify themselves as knowledge-based, including traditional industrial cities like Tampere (Kostiainen & Sotarauta 2003) and Pori as well as various smaller localities with the help of state initiatives such as the Centre of Expertise Programme (*Häyrinen-Alestalo et al. 2006a*). Along with the growing importance of university and research connections to business activities, small industrial cities tend to find themselves in a particularly difficult position as they lack the crucial connections to the main knowledge-creating organisations. This encourages them to build such linkages, but it may not be enough in order to keep companies located in the regions, which has recently been highlighted by the case of Varkaus, an industrial city in Central Finland (Lovio et al. 2006). Overall, knowhow, research and development and innovations have become a generalised formula which all political parties and decision-makers on various levels of administration see as the source of Finland's success in the future. This reflects a strong societal consensus and political commitment to the development of a knowledge-based economy.

The 'Finnish model' and increasing inequalities

Due to the restructuring of the economy and the rapid economic growth in the late 1990s and early 2000s, Finland became an example of the transformation towards knowledge-intensive production giving rise to discussions of the 'Finnish model' and 'Finnish miracle' (e.g. Castells & Himanen 2002; Benner 2003; Schienstock 2004; Saari 2006a). Finland has thus been seen as an illustration of successful adaptation to globalisation in that it has been able to move into the knowledge economy while maintaining extensive and inclusive welfare structures and policies. For instance, Castells and Himanen (2002, 83–85) concluded in their well-known analysis of the intertwining of the welfare state and information society that the Finnish welfare model survived the cutbacks during the recession and thereafter

"fundamentally unchanged". They refer to the possible new inequalities, but consider them more as threats than as reality. Such a view might, however, need reconsideration, as there are clear indications of increases in regional and social inequality in Finland (Julkunen 2006, 219–235; Riihelä et al. 2007; *Pelkonen 2005;* 2007) which refer to a development that is characteristic of the competition state rather than welfare state. As noted above, both Jessop (2002, 159) and Brenner (2004, 169, 260) emphasise that the policies of the competition state are prone to increase inequalities and uneven regional development. Here I will not enter into a detailed discussion concerning the transformation of welfare policies in Finland.[14] Instead, my purpose is to point out that there has been a substantial increase in inequalities and that Castells and Himanen's analysis provides a somewhat uncritical account of the transformation in this respect.[15] Overall, it seems that the growth of inequalities has not been thoroughly taken into account in the discussion concerning the 'Finnish model' (e.g. Oinas 2005; Saari 2006a).

During the 1990s, the growth of regional differences and inequalities was particularly strong in Finland (Hanell et al. 2002; *Pelkonen 2005; Häyrinen-Alestalo et al. 2006a*). The knowledge-based growth tended to concentrate on a few localities while large parts of the country were increasingly marginalised. According to Kainulainen et al. (2001, 99), regional disparities in welfare grew to a level where the equality and social-political principles of regional policy legislation "were no longer fulfilled in a satisfactory way". Shifts in political priorities, in this respect, took place during the late 1980s and early 1990s and can be discerned in government programmes. In the 1983 and 1987 government programmes the emphasis was explicitly on the promotion of balanced regional development and supporting the weakest and the most problematic regions, whereas the 1991 government programme referred to the less-developed regions but increasingly also to the development of competitive centres of expertise. In the 1995 government programme, the promotion of "strong growth poles that are competitive in the international markets" and the creation of new firms were underlined while less-favoured regions were not mentioned (cf. *Häyrinen-Alestalo et al. 2006a*). Changes in the priorities of state regional policy as well as the increase in regional differences are discussed in more detail in section 6 below.

14 There are two reasons for this. First, it has not been a principal focus in my original studies. Secondly, to provide a meaningful synthesis of the research and debate concerning the changes that have taken place in the welfare system would be a task that goes beyond the scope of this article and actually would form a study of its own.

15 Castells and Himanen examine the welfare dimension in a rather narrow manner and refer to a very limited amount of secondary sources. They rely on the results of the Economic Crisis of the 1990s research programme of the Academy of Finland. They thus neglect various studies that point to more qualitative changes. For a critique of Castells and Himanen's account of the welfare dimension, see also Patomäki (2003).

During the 1990s, social and health policies were also reformed which included, for instance, a reduction in the level of social benefits. This transition has proved enduring since social benefits were not raised during the growth period following the recession (Kautto 2003). Typically of a competition state, such reductions in welfare policies in the early 1990s coincided with substantial increases in investments in the knowledge-based economy (*Pelkonen 2006)*. On this basis, some have argued that there has been a shift to a welfare policy which has provided citizens with "decreasing rights, uncertainty over authorities' decisions, social exclusion, high administrative costs and new income traps" (Anttonen & Sipilä 2000, 275; also e.g. Julkunen 2001). Others have maintained that while making the Finnish welfare state slightly less universal the overall impact of the changes has been moderate and not system-destroying (e.g. Nordlund 2003). Given the diverging interpretations, it is difficult – and not even my purpose here – to provide an overall conclusion concerning welfare policy change in Finland. However, I believe that it can be concluded, following Timonen (2003, 4–8, 183–186), that despite the changes the Finnish welfare policies have not been converted into a residual model.

The growth in inequalities has taken place in particular in the latter part of the 1990s (Riihelä et al. 2007; 2005) and perhaps characteristically, Castells and Himanen's analysis does not cover this period (Patomäki 2003). Accordingly, since 1994, income differences have grown due to increasing capital income shares and to a declining trend in the average incomes of the high number of households of the unemployed (Kautto 2003).[16] The growth in income inequality has never been as fast in Finland as it has been since the middle of the 1990s (Riihelä et al. 2005). One reason has been the reform of the tax system in the early 1990s which decreased the system's redistributive impacts. During the recession, the unemployment level rocketed to 16 per cent (in 1993), and despite subsequent strong economic growth has remained rather high (6.7 in November 2007, while the EU average was 6.9 per cent, according to Eurostat). Long-term unemployment in particular has remained high and has tended to increase poverty and social exclusion in the country. Accordingly, relative economic poverty grew substantially between 1995 and 2004 and at the same time poverty became more severe (Riihelä et al. 2007; Kautto et al. 2006). These developments are a reflection of the situation in which it is difficult to combine the goals of increasing social equality and economic growth under a growing market orientation (*Pelkonen 2003a*). As a more egalitarian society is a (more or less) explicit objective of the Nordic welfare state model, increasing income inequality does not fit the model well (Timonen 2004). Interlinking growth with equality is thus becoming a pivotal challenge for the future.

16 It is worth noting that during the 1980s and 1990s the growth of market income inequality for households has been a general trend across the OECD countries (Kenworthy & Pontusson 2005).

Finland's recent top scores in various international competitiveness rankings have been seen as one indicator of the success of the 'Finnish model'. Much less attention has, however, been paid to the fact that Finland places 5th when affluent OECD countries are ranked according to increasing household inequality during the 1980s and 1990s (Kenworthy & Pontusson 2005, 452). Nevertheless, while on a global scale Finland succeeds well in various comparisons of standard of living and welfare (Saari 2006c), it is also worth noting that in these rankings Finland has not been among the top countries. For instance, in the United Nations' human development index which measures life expectancy, educational level and standard of living Finland ranked 13th in 2005 and 11th in 2007 (United Nations Development Programme 2005; 2007). As well, the latest technology barometer reflects the fact that in the indicators of social cohesion, measured in terms of health, income distribution, employment and gender equality, Finland ranks well below Sweden, Denmark and the Netherlands (Lehtoranta et al. 2007).

5 Building a neocorporatist and neostatist strategy for technological upgrading

In terms of policies for economic growth, the general shift towards a competition state has included a state strategy for upgrading the national knowledge base, strengthening research and development activities, and promoting the development and application of new technologies. In this regard, Finland demonstrates a rather persistent and long-term line of policy in which two significant turns towards more 'Schumpeterian' and innovation-oriented policies can be identified.

The first shift took place in the late 1970s and early 1980s, as knowledge and knowhow were set in the core of the national strategy. While the creation of institutions, activities and means of technology policy had been started in the middle of the 1960s, in the following decade significant boosts to strengthen technology policy were provided by the oil crisis, the economic recession and the aim of promoting the use of nuclear power (Lemola & Lovio 1984, 120–126; Murto et al. 2006, 40). At the time, it was observed that Finland was a backward country in terms of technological development and that economic growth in the country could not rely on the traditional factors such as increasing the use of forests, protected markets and adopting foreign technical knowledge (Lemola 2001, 36–39). The change of emphasis from low-cost, energy-intensive production and investments to knowledge-intensive production was outlined in the consensual Korpilampi conference in 1977 (*Häyrinen-Alestalo et al. 2006a*). In the conference, attended by the political elite and representatives from interest groups and labour market organisations, Prime Minister Sorsa referred to the increasing international economic competition and emphasised the need to promote competitiveness through high quality products, technological upgrading and strengthened marketing.

This line of policy was subsequently consolidated after the work of the broad and corporatist Technology Committee (1979–80). The committee was set up to examine the economic and social effects of the rapid development of microelectronics and the increasing use of automation. In its work, the committee adopted a broad socio-political perspective on technological development, and in the final report laid the foundations for the future development of technology policy in Finland (*Pelkonen 2003a*). A strongly resourced technology policy was started and three core technological areas were identified which formed the central objects of public funding during the following two decades: information technology, biotechnology and material technology. In 1982 the government made a decision-in-principle in

technology policy in which it decided to raise the share of R&D of GDP from 1.2 to over 2 per cent by 1990. In the following year the National Technology Agency (Tekes, currently the Finnish Funding Agency for Technology and Innovation) was established to promote and finance technological development by implementing national technology programmes. Tekes quickly became an important planning and implementing organisation in technology policy with growing funds from the state budget. In 1987 the Science Policy Council was transformed into the Science and Technology Policy Council which strengthened the links between science policy and technology policy, created a high level political forum for the consolidation of these separate policy fields and gained increasing political weight (*Pelkonen 2006*).

These changes reflect well the state's drive to move up the technological hierarchy, to specialise in new core technologies and to support economic sectors considered as 'sunrise sectors' (Jessop 2002, 128–129). Although this refers to an explicit policy to promote technological innovation, the development in Finland seems to present a tension in terms of the degree to which the policy has been based on conscious and strategic choices. On the one hand, there has been a long-term line of policy to promote new technologies and it can even be argued that Finland was quite early in identifying the possibilities that new information technologies provide. This is evident in the state's actions to advance electronic data processing in the 1960s and 1970s as well as in the dominant position of information technology in Tekes funding in the 1980s (*Pelkonen 2003a*; 2004). Yet on the other hand, the actual technology policy-making has been strongly based on the market mechanism, as demand from firms has been quite decisive in determining how public technology funding has been distributed among technological fields (Lemola & Lovio 1984, 145–147; Lemola 2004, 278–279). In such a bottom-up approach, few strategic choices have been made in the public sector (*Pelkonen 2003a*). In the early 2000s, however, there has been a clear aim to strengthen strategic thinking in decision-making related to technology policy (e.g. Tekes 2008; 2005). One indication of this is the ongoing work to formulate a national innovation strategy for Finland.

Along these lines, technology policy gained increasing importance and a stronger position with respect to science policy throughout the 1980s and 1990s (also Allardt 1995). It also began to replace more traditional industrial policy as a means of promoting industrial development. Public funding for research and development was strongly increased. A massive investment was made when 500 million euros were directed to R&D between 1996 and 1999 through an additional public funding programme. Over half of this funding was directed to Tekes, while both the Academy of Finland and the universities received 20 per cent (Prihti et al. 2000). The funds were gained through the privatisation of public enterprises which reflects a shift in the state's industrial and economic role from an owner of industrial companies towards a catalyst of new activities. In a neostatist manner, these funds

from privatisation were invested in promoting scientific and technological upgrading and developing promising sectors. In Jessop's terms, the funding programme thus represents an indication of how the neoliberal approach of privatisation was combined with a neostatist approach to state activities.

Interestingly, it seems typical for competition states also in more general terms that funding for such neostatist strategies (in terms of investments in technological upgrading) is sought outside the strict frameworks of the state budget. In Finland this has been done through privatisation of state-owned companies, in Sweden through re-investment of wage-earner funds (Benner & Sörlin 2007; Elam & Glimell 2004) and in Norway through oil revenues and establishing a specific fund to finance research by selling government stocks (Remoe 2005). In Finland, Prime Minister Vanhanen has proposed a programme of "creative investments" that would be financed through further selling of the state's ownership during the current government's term of office (Mielonen 2007; also Pekkarinen 2007).

Through such an active structural policy, Finland now has the second highest proportional investments in R&D in the world. In 2006 the share of R&D expenditure of GDP was 3.45 per cent and the current government aims to continue this line by raising the share to 4 per cent by 2011 (Cabinet programme 2007). At the same time, the corporate share of R&D expenditure has grown substantially (71 per cent). Due to industry's strong participation, the policy of technological upgrading has been based on a "shared decision" between the government and industry (Häyrinen-Alestalo et al. 2004). Furthermore, in the neocorporatist tradition, trade unions have also been rather strongly involved and their support for technology policy has been particularly important.[17] While trade unions took a critical stand on technological progress up until the 1970s, they developed a positive attitude towards technological development after the work of the Technology Committee (*Pelkonen 2003a*). Accordingly, new technologies were considered as a means to achieve higher wages and not as a factor that reduces employment. During the 1990s, trade unions explicitly prioritised strategies designed to improve technological competitiveness vis-à-vis alternative reform initiatives (Ornston 2006). In this respect, trade

17 The literature on 'varieties of capitalism' provides an extensive discussion on the institutional structure and variation of political economies, paying particular attention to the role and coordination between firms, trade unions, business associations, state agencies and banks (Hall & Soskice 2001). The main emphasis of the original studies of this thesis has, however, been on the content, objectives and implementation of science, technology and innovation policies, and less attention has been paid to the process of policy formation as well as the impact of different actors upon it. Therefore it would go beyond the scope of this summary article to provide a detailed account of the roles of industry and trade unions, for instance, in the formation of science, technology and innovation policies. I thus confine myself here to a discussion of how far the Finnish decision-making system in these respects follows Jessop's neocorporatist variant of the competition state.

unions have had a central role in consolidating the development towards an innovation-oriented competition state.

If neocorporatism is seen as a distinct way of making policy characterised by mutual cooperation between large interest organisations and their integration into the process of policy formulation and even implementation (Molina & Rhodes 2002), technology policy-making in Finland has largely followed such a pattern. The neocorporatist model has, however, implied that the formulation of technology policy takes place in rather closed circles of policy-makers and stakeholders in which the formal parties are the central actors: representatives from key ministries and state agencies (in particular the Ministry of Trade and Industry – as of January 2008 the Ministry of Employment and the Economy[18] – the Ministry of Education, Tekes and the Academy of Finland), high tech firms, universities and research institutions (especially the VTT Technical Research Centre of Finland) as well as labour market organisations. This has implied that non-governmental organisations or other civic organisations have in general terms been weakly integrated into such bodies or decision-making processes in more general terms (*Pelkonen 2006;* Kuitunen & Lähteenmäki-Smith 2006). The composition of the Science and Technology Policy Council as well as the line-up of other key decision-making bodies such as the board of Tekes illustrates this well (*Pelkonen 2006*, 675–676). In these neocorporatist arrangements, high tech firms have strong representation and have been gaining increasing clout. Nokia in particular has numerous representatives in the highest decision-making bodies related to technology policy, and its representatives have been influential in the Science and Technology Policy Council, for instance (Pelkonen 2007). The weak participation of politicians and political parties in the general technology policy discussion has also been characteristic of Finland.

Jessop (2002, 261; also Jessop & Sum 2006, 112–113) maintains that a characteristic feature of neocorporatist arrangements in the Schumpeterian competition state is that they extend beyond the organisations of capital and labour to include stakeholders representing various other interests and functional systems in the society. Yet, the Finnish decision-making system in technology policy has remained rather closed, for instance with respect to civic organisations, although there are some indications of their increasing integration into biotechnology policy (Rask 2003; cf. Snell 2002) and information society policy (Pelkonen 2007). This could largely be defined as 'exclusive corporatism' as distinct from more inclusive forms of corporatist decision-making like in Norway (Kallerud 2004) or more participatory or deliberative forms of governance like in Denmark

18 The Ministry of Employment and the Economy was established by merging the Ministry of Trade and Industry, Ministry of Labour and the Regional Development Unit of the Ministry of the Interior.

(Bertilsson 2004). The issue of public participation in decision-making has thus not become an important concern in Finnish science and technology policy. Instead of attempting to bring the public closer to technology policy decision-making, educational and market-based forms of governance have been characteristic of Finland (Häyrinen-Alestalo et al. 2004). On the one hand, there have been efforts to educate and convince citizens so that they understand the benefits that the adoption of new technologies brings. This has been evident, for instance, in national information society strategies in which citizens are encouraged to educate themselves, continuously learn new things, take increasing responsibility and, in particular, learn to use new ICT devices in order to be active members in the information society (Pelkonen 2003d; cf. Uotinen 2003). On the other hand, citizens have been regarded as consumers of technological devices and products who express their will through actions in the marketplace (Snell 2002). Given the growing importance of various ethical questions and public concern related to the societal and environmental impacts of new technologies, it may be that the closed neocorporatist model will be questioned in the near future (*Pelkonen 2006*; Häyrinen-Alestalo & Pelkonen 2004).

Breakthrough of the 'innovation paradigm' and universities' growing pressure to commercialise

A second shift towards 'Schumpeterian' or innovation-oriented policy took place in the early 1990s. First, new industrial policy was formulated which increasingly shifted the focus from direct and supportive policies to an efficiency-driven growth strategy (*Pelkonen 2003a*). This placed a growing emphasis on promoting the structural change of the economy and the functioning of the markets. The main means included supporting technological development and business networks, securing funding for R&D, increasing competition and investing in education (also Ministry of Trade and Industry 1993).[19] In Jessop's terms, the state maintained a strong, neostatist role but there has been a shift in the policy content and mode of state intervention from more selective policies (in terms of sectors and industries) and regionally-based business aids ('picking the winners') towards promoting competition and improving the overall operating environment of companies ('let the winner pick') (e.g. Ylä-Anttila & Palmberg 2007). In line with the competition state theses, this approach puts great emphasis on turning the country into an attractive location for internationally competitive companies.

19 This policy shift was largely related to the growing internationalisation of firms, increasing mobility of the factors of production as well as economic and political integration in Europe which has restricted the use of direct industrial aids (Jääskeläinen 2001; Ylä-Anttila 1998).

Second, the concept of the national innovation system – referring to the totality of factors that influence the development and utilisation of new knowledge and expertise – was raised as the central organising concept of science and technology policy (Science and Technology Policy Council 1990; see also Miettinen 2002). The aim was to develop a broad and holistic framework for policies related to knowledge creation and diffusion, and, subsequently, the concept penetrated into various sectors of policy. Besides science and technology policy, it was also adopted as a main starting point in economic policy and national industrial strategy. Throughout the 1990s the concept was further elaborated in the state administration and there has been a strong commitment to it among civil servants as well as political decision-makers. Recently the concept of national innovation system has been gradually substituted by the concept of 'innovation environment' conceived primarily as the business environment of firms. In this respect, emphasis is put on the need to promote the "attractiveness of the innovation environment for foreign R&D investments" (Ministry of Trade and Industry 2004; also Prime Minister's Office 2006). This reflects well the tendency in Finland to interpret the concept of competitiveness in terms of attractiveness.

Although it is unclear to what degree the use of the concept of the innovation system has changed actual policy-making practices (Miettinen 2002), it has tended to reinforce the economic and commercial aspects in science and technology policies. This has taken place by putting the concept of innovation – instead of concepts like knowledge, science or research – at the centre of policy. In this respect, the key point is that the concept of innovation, ultimately, tends to refer to activities that are economically beneficial (Allardt 1995; *Pelkonen 2003a*). Accordingly, an important consequence of this line of policy has been that a growing emphasis has been placed on the commercialisation of research in universities and research institutes. Universities have thus become actors in the innovation system and are expected to contribute to all phases of the innovation chain (Häyrinen-Alestalo 1999; see also e.g. Miettinen et al. 2006; Kutinlahti 2005).

In his analysis, Jessop (2002, 130, 166–167) also takes up the issue of how competition states engage in the increasing commodification of knowledge. Given the centrality of knowledge production in the context of the transition to a knowledge-based economy, it is, however, slightly surprising how little attention he devotes to this issue. In this respect, he mainly makes the observation that universities are encouraged to approach the corporate world and to capitalise on their intellectual property. However, he does not discuss the problems that may arise in the commercialisation of academic research. In Finland, the increasing emphasis on innovations and market orientation has created pressures on universities to move towards competition, efficiency and rationalisation (*Pelkonen 2003b*). The principles of management by results have been applied to universities, as well as related evaluations. As a consequence, university evaluations "literally exploded"

in the latter part of the 1990s (Nieminen 2005). Furthermore, research funding was simultaneously made increasingly competitive as increases in state appropriations in research were mainly directed to funding agencies, the Academy of Finland and Tekes. Compared to the number of students and completed degrees, university resources decreased during the 1990s (Pelkonen 2001, 6). Accordingly, it has been expected that universities compensate for these cuts by competitive funding outside the state budget. Universities have been increasingly integrated into market-orientation, and university research has been put under the pressure of commercialisation. Yet universities have encountered problems in their attempts to approach the market, not least related to the profitability of their commercial activities (*Pelkonen 2003b*; also e.g. Häyrinen-Alestalo & Peltola 2006; Tupasela 2000). In section 7 I will discuss in more detail the approaches and various problems related to commercial activities in three capital region universities.

The role of the Science and Technology Policy Council

The central role of the Science and Technology Policy Council as an architect in the shift towards an innovation-oriented growth strategy has been widely acknowledged (e.g. Castells & Himanen 2002; Lemola 2001). Headed by the Prime Minister and having a high-level line-up including ministers as well representatives from key actors and stakeholders of the innovation system, the Council acts as an advisory body to the government in issues related to science and technology. Generally, the Council has been considered a crucial element in the success of Finnish science and technology policy (e.g. European Commission 2003) the main indication of which has been the establishment of similar councils in several countries following the Finnish example (*Pelkonen 2006*). Furthermore, it has been considered to hold a very powerful position in the Finnish administrative system, in particular with respect to R&D budget decisions (e.g. Arnold & Boekholt 2003). I argue, however, that it does not hold as much power as has often been considered (*Pelkonen 2006*).

In strategic terms, the Council has been a key actor in promoting the knowledge-based economy as a central political objective in Finland (*Pelkonen 2003a*). In the 1990s the Council strived to develop a national strategy for knowledge and innovations in its policy reviews. For this purpose, it imported two key concepts from OECD circles – the national innovation system (1990) and the knowledge-based society (1993) – and subsequently introduced them as integral parts of the Finnish policy framework. Throughout the decade, knowledge and knowhow were the central concepts in the Council's policy guidelines, referring increasingly to innovations and knowledge that can be commercially utilised. The concept of knowhow highlights the role of a high level of education but it also refers to the citizens' need to continuously

develop and educate themselves so that they can manage in an increasingly competitive environment (*Pelkonen 2003a*; cf. Eela 2001).

Jessop (2005a, 154–155) stresses the role of the US government as well as various international organisations, in particular the OECD, the WTO and the EU, in promoting the rise of the knowledge-based economy as a 'master narrative' and an economic strategy. Similarly, Godin (2006; 2004) has illustrated the central role of the OECD in the resurgence and constitution of the knowledge-based economy as an umbrella concept of science and technology policy during the 1990s. While emphasising that various nation states have embraced the knowledge-based economy concept, Jessop does not pay attention to the actual adoption and transfer of the concept from the supranational level to national policy-making. In this respect, there is a need for mediating actors that import the concept and adjust it to the national policy framework. In this regard, and also in more general terms, Jessop's analysis is agentless in that it does not highlight any of the national actors that have been instrumental in bringing forward the economy and innovation-oriented policies (cf. Hay 2004). In Finland, the Science and Technology Policy Council has adopted the role of absorbing ideas and influences from international policy circles, fitting them into the national science and technology policy framework and promoting their implementation. It has been a particularly adequate actor in this respect given its influential position and the consensual policy environment in which it has operated (*Pelkonen 2006*).

Although the Council has undoubtedly been an influential actor, its political power has often been overestimated (e.g. Arnold & Boekholt 2003). In practice, the significance of the Council depends on the degree to which its guidelines and recommendations are taken into account in political decision-making at different levels, and in this respect its influence seems to vary. For instance, the Council's recommendations for increasing R&D funding are not always implemented which reflects the fact that they are dealt with according to the normal budgetary procedure of the state administration. In this respect, the ultimate power lies with the Ministry of Finance, the government and Parliament, and the Council does not have an exceptional position. Moreover, despite the Council's influential line-up, its links to high-level political decision-making, for instance in Parliament, have not been very strong. This has been reflected in the fact that its guidelines have thus far not been integrated to parliamentary decision-making in a systematic way. Therefore, the power of the Council has mainly been limited to raising issues for discussion and developing initiatives. However, related to its corporatist composition, the Council has been strongly consensus-based in its operation, which tends to be an obstacle for creating new and innovative policy initiatives (*Pelkonen 2006*).

The challenge of a broad conception of innovation policy

The pursuit of knowledge-based economic growth and competitiveness has thus become a core objective of competition states. This is also reflected in the reshaping of policies concerning knowledge creation and diffusion, moving them towards promoting innovation and entrepreneurship (Jessop 2002, 126–128). Accordingly, the focus has shifted from science policy with an emphasis on basic research and scientific education via technology policy stressing industrial application of research and technology transfer, towards innovation policy which highlights the institutional and organisational factors that bear on the production and application of knowledge (Borrás 2003).[20] Moreover, such a move towards innovation policy has tended to shift the emphasis from broader social objectives to economic aspects of the policy (cf. Häyrinen-Alestalo 1999; Lundvall 2001). Yet more recently, the paradigm of innovation policy has been questioned and a discussion of a new direction for policy-making in this area has emerged at the supranational level as well as at the national level in various advanced countries (e.g. OECD 2002; European Commission 2003; Prime Minister's Office 2004). This has been related to the observed weaknesses in the area of innovation policy in the OECD countries (Edler et al. 2003). In particular, policies have been considered as being dominated by a linear model of innovation and characterised by a high degree of sectoralisation and low interdepartmental cooperation which amount to a narrow interpretation of innovation policy. Accordingly, it has been argued that innovation policy should encompass a broader approach by taking into account factors that influence the emergence of innovations on a larger scale and by developing linkages and coordination across policy sectors (OECD 2002).

Broadly speaking, there have been two approaches to this new conception of innovation policy. On the one hand, it has been interpreted as a paradigm that further stresses the economic goals of growth and competitiveness. In this view, innovation should become a central target in all policy areas (European Commission 2003; cf. Chamberlin & de la Mothe 2004) which would largely be characteristic of the competition state in Jessop's sense. On

20 The description of the shift from science policy via technology policy to innovation policy is a stylised, ideal-type account of policy evolution and there may be variations between countries. Borrás (2003, 14) argues that for instance the EU policy in this area followed this development. In many cases, the development may be much more blurred and the shifts from one stage to another may be difficult to discern. It is informative in this respect that the concept of innovation policy has been used at least since the early 1980s, coming up through OECD circles (Lemola & Lovio 1984, 137) and quite often it has been used nearly as a synonym for technology policy. As a matter of fact, rather than seeing policy evolution as clear steps from one phase or policy approach to another, it may be better to consider the three policies as co-existing forms while shifts have occurred in the overall focus between the three approaches.

the other hand, there have been views of a comprehensive innovation policy which balances the goal of economic growth with other goals that may be in conflict with economic growth, such as social and environmental policy (OECD 2005). In this perspective, innovation is seen not only as a source of economic growth but also – and perhaps increasingly importantly – as a solution to various societal and environmental problems. Accordingly, a broader innovation policy would not imply the penetration of market and innovation thinking into other sectors of policy but adjusting the imperatives of various policies under a broader framework (OECD 2005; cf. *Pelkonen 2006*; Lundvall 2001). In a similar vein, Hautamäki (2008) has recently paid attention to the problems caused by the economic growth policy paradigm (in particular environmental degradation and climate change) and has urged that economic growth should be replaced by well-being, human development and sustainable development as the primary goal of innovation policy. Such 'sustainable innovation' – and related 'sustainable innovation policy' – would be based on ethically, socially, economically and environmentally sustainable principles and would take into account the long-term impacts that innovations and innovation processes have on people, societies, the economy and the environment. With respect to the competition state, the latter approach would entail a dramatic turn in its orientation as well as the adoption of a broad perspective on innovation and competitiveness that emphasises horizontal coordination and balances innovation policy objectives with the objectives of other policy sectors.

In Finland, the strengthening of technology policy during the 1980s and the subsequent adoption of the innovation system approach emphasised economic objectives. The contribution to economic growth and the promotion of competitiveness have thus become increasingly central goals also in science policy and research activities in more general terms. This shift towards competitiveness and innovation-orientation is visible also in the guidelines of the Science and Technology Policy Council (*Pelkonen 2006*). Here there is a long-term line of policy since the 1970s that stresses growth in national investments in R&D, and the need to increase the internationalisation of research, raise the quality of Finnish research as well as promote post-graduate education. Alongside this rather stable line of argumentation, there was in the 1990s an increasing emphasis on the competitiveness and attractiveness of Finland, economic growth, and excellence, productivity and profitability of research activities. Accordingly, technology and innovation policy became ever more influential in government policies in general, and its objectives have also penetrated into various other areas, such as university policy (Häyrinen-Alestalo 1999; *Pelkonen 2003*a) and regional policy (*Häyrinen-Alestalo et al. 2006a*). This implies that other policy sectors are increasingly expected to contribute to innovation objectives (cf. Kuitunen & Lähteenmäki-Smith 2006) referring to a narrow economic interpretation of the new innovation policy.

At the same time, however, the goals of technology and innovation policy have also started to broaden (*Pelkonen 2003a*). Although economic goals have remained primary, broader perspectives as well, such as those of environmental issues for example, have been linked more to the technology policy framework. This is visible, for instance in the broadening sphere of operation of Tekes as it has moved to new areas, such as the service sector, welfare and health care. Yet it is still unclear to what degree such moves imply a unidirectional transfer of the goals of technology and innovation policy – such as productivity, efficiency, and creating new markets and business opportunities – to new sectors to which they may not be adaptable. For instance, in health-related innovation policy, contradictions have emerged due to the dominance of the goal of promoting business vis-à-vis the goal of improving the health service system and its cost-effectiveness as a whole (Häyrinen-Alestalo et al. 2005, 130–133). To what degree other policy sectors can be reasonably adapted to the promotion of innovation thus seems to be becoming a fundamental question for innovation policy in the near future (cf. Lundvall & Borrás 2006, 613–614). Similarly, the issue of optimally coordinating the various innovation-relevant policy sectors in the state administration is increasingly salient (see Braun 2008; Pelkonen et al. 2008).

To some degree, the broadening concept of innovation policy can also be seen in the guidelines of the Science and Technology Policy Council (*Pelkonen 2006*). The Council has paid attention to horizontal relationships with other policy sectors, such as regional policy, employment policy and information society, and has introduced the concept of social innovation[21] to the policy framework. While it has made references to environmental issues in its guidelines (Kivimaa & Mickwitz 2006), however, the members of the Council maintain that environmental questions have not been very much addressed in the Council's actual work (*Pelkonen 2006*). As a matter of fact, there seems to be lack of interaction between science and technology policy and environmental policy (or sustainable development policy) at the agenda-setting level (Hjelt et al. 2005). Furthermore, although the importance of horizontal policy is increasingly acknowledged (Science and Technology Policy Council 2006; 1996), there has been a lack of a systematic balancing of objectives with other policy domains. Similarly, the concept of social innovation seems insufficient to capture the broad social dimension

21 The concept was introduced in the 2003 review of the Council. On the whole, it can be seen as an attempt to integrate the perspective of social development into the technology- and economy-dominated framework of technology policy. However, the concept was not properly defined and social innovations were just considered as providing "impetus for social and cultural development" and as contributing to the "prevention of factors causing negative societal and social development" (Science and Technology Policy Council 2003, 6, 16). This has caused confusion in terms of the attempts to interpret and implement the concept (Hämäläinen & Heiskala 2004, 10).

related to science, technology and innovation including issues like wellbeing, equality, participation and democracy. They cannot be covered by focusing on social innovations and in this respect complementary perspectives are needed. Moreover, it is worth noting that issues of public participation and dialogue have not been addressed at all by the Council in its latest reviews (*Pelkonen 2006*).

A certain broadening of objectives can also be discerned with respect to the national information society strategies (*Pelkonen 2003a*). After the strong technological and economic orientation of the early 1990s, more societally oriented objectives and perspectives have been integrated into the strategies of the late 1990s and the 2000s. There has thus been more emphasis on integrating the needs and perspectives of different groups of people and also growing attention on the usability of information and communication technologies. Furthermore, risks and threats related to new ICTs – such as exclusion, increasing inequalities, degradation of services and vulnerability – are also taken into account. In the latest information society strategy, now labelled as the knowledge society, the rhetoric of human-centrality is pervasive: the goal of the strategy is to develop Finland into an "internationally attractive, human-centric and competitive knowledge and service society" (Prime Minister's Office 2006). However, such catchwords as 'human-centrality' tend to remain fuzzy if they are not directly linked to concrete measures and there is a strong economic undertone in the strategies.

From the perspective of broad and horizontal innovation policy, also the operating model of the Science and Technology Policy Council proves problematic in two respects (*Pelkonen 2006*). First, its influence is mainly limited to core science and technology policy administrations while it does not have a similar position with respect to other sectors, even in terms of research-related issues. Second, although the Council has a broad line-up, it is problematic that important policy sectors from the perspective of research and innovation have been lacking representation in the Council. For instance, the minister responsible for regional development[22] has never been appointed as a Council member, and ministers responsible for social and health policy and agricultural policy have very rarely been nominated to the Council. Furthermore, the role of those sectoral ministers who have been appointed to the Council has been rather marginal in terms of participation in the Council's work. The Council's mode of operation hence remains closely tied to the administrative branches of the Ministry of Trade and Industry (as of January 2008, the Ministry of Employment and the Economy) and the Ministry of Education.

22 Along with the establishment in January 2008 of the Ministry of Employment and the Economy the responsibility for regional development shifted to the Minister of Economic Affairs who has a permanent seat on the Council.

6 Moving towards urban locational policies – commonalities and divergences

Brenner's (2004) main argument is that the competition state adopts an increasingly entrepreneurial and growth-oriented approach to regional development. In these urban locational policies, major cities and urban regions are targeted and prioritised as sites of territorial competitiveness and economic growth. In Finland, changes in the priorities of state regional policy have indeed taken place and there has been a shift from the goal of balanced regional development towards competitiveness and increasing regional differences (see *Häyrinen-Alestalo et al. 2006a; Pelkonen 2005* and Hanell et al. 2002, 37–38 for more details). After the Second World War, Finnish regional policy was first linked to the efforts to industrialise the country through public investments, state-owned companies and promoting raw-material-based industries. Along with the expanding welfare state programme, regional policy was gradually more closely integrated into the goal of equalisation. A central objective in this framework was the promotion of underdeveloped regions while unemployment and slow modernisation of peripheral areas were seen as key problems (*Häyrinen-Alestalo et al. 2006a*). Furthermore, it was felt that economic activities should not be concentrated in Southern Finland, but rather be spread largely around the country. Accordingly, attempts to contain the growth of the capital region were an inherent part of these policies (*ibid.*).

Although the goals of technology policy became increasingly visible in regional policy during the 1980s, a major shift in regional policy priorities took place in the 1990s (*Pelkonen 2005*). In the 'new' regional policy, competences and technological knowhow became the starting points of regional development. Macro-economic objectives, efficiency and regional differentiation were given priority over equality and equal treatment of regions. Promoting endogenous development was emphasised, in which the aim is to identify and support regions' own strengths and potential. The primary responsibility for regional development was increasingly placed on regional and local initiatives and activities and less on state measures. Accordingly, regional problems as such do not warrant state support but rather the support is conditional on the solutions proposed by the regions (Jääskeläinen 2001, 35). Success in the global economy was explicitly set as the key criterion of regional policy and development, and thus the imperatives of competitiveness and global competition penetrated into regional development as well. The shifts in regional policy priorities were largely related to the growing importance of knowledge and innovation in

the overall national 'strategy' as well as the need to adjust national regional policy to the regional policy of the European Union (*Pelkonen 2005*).

This development in Finland reflects Brenner's characterisation of urban locational policies, but it also diverges from it in important ways. First divergence concerns the timing of the changes. The main changes in the priorities of state regional policy occurred in Finland during the 1990s whereas Brenner argues that urban locational policies were adopted in Western European countries in the early 1980s. Second, and more importantly, the emphasis on core urban regions has not been as strong in Finland as is held in Brenner's thesis (cf. Brenner 2004, 207–219; 1998). A good indication of this is the fact that the state has thus far not clearly prioritised urban growth regions (*Pelkonen 2005*). Rather than focusing on a few growth areas, state urban policy has concentrated on developing a relatively large number of regional urban centres around the country. The idea – as represented for instance in the Regional Centre Programme aiming to develop over 30 urban centres in Finland and the Centre of Expertise Programme (see below) – is that the growth will be spread from the urban centres to the surrounding regions. The goal is thus also to keep the more peripheral regions within the development and balance the regional structure (*Häyrinen-Alestalo et al. 2006a*; cf. Neubauer et al. 2007, 74–77). Yet it seems that in this respect some amendments are currently taking place. In 2006 a specific programme to support the core urban regions was established (A Policy Mix for Large Urban Regions) in which the central role of urban growth regions with respect to the economic and social development of the country is underlined. The main objective of the programme is to "develop urban regions as innovative environments" and "to enhance their international competitiveness" (Ministry of the Interior 2006, 3). Also in the recent government programme (2007) the importance of state policy for large urban regions is emphasised, for the first time at the government programme level. The outcomes of these policies, however, remain to be seen.

However, in line with Brenner's characterisation of the consequences of urban locational policies, the shift towards competitiveness-oriented regional policy has been accompanied by a view that regional differences will inevitably grow and that balanced regional development is no longer such an important goal in itself. Instead, centralisation and concentration have been considered increasingly favourable. Consequently, regional differences and polarisation have increased substantially, in particular during the late 1990s related to ICT-driven growth (*Pelkonen 2005*). The Helsinki and Tampere regions in the south and Oulu in the north have been the fastest growth poles, as the new ICT entrepreneurship has concentrated in these areas. At the turn of the millennium, half of the ICT jobs in the country were located in the capital region. Currently the four most research-intensive regions (Helsinki, Tampere, Oulu and Turku) account for over 75 per cent

of the total R&D expenditure in the country (Statistics Finland 2007). In particular, the growth of Nokia has increased regional income differences. In the early 2000s the regions where Nokia mainly operates – Helsinki region, Salo and Oulu – corresponded with regions where household incomes were among the highest (Statistics Finland 2002). On the other hand, the most peripheral regions in the northern and eastern parts of the country are losing population and are lacking entrepreneurship. Compared to other Nordic countries, Finland continues to have an exceptionally pronounced regional polarisation, particularly in terms of differences in regional unemployment rates (Neubauer et al. 2007, 22–23).

The ambivalent position of the capital region

The Finnish peculiarity in terms of state territorial strategy, however, seems to be the ambivalent position of the capital region[23] (*Pelkonen 2005*). A shift to a clear-cut urban locational policy would imply that the state would strongly promote the capital region as its major motor of economic growth leading to the development of mutual 'growth coalitions'. Instead, the negative state stand towards growth in the Helsinki region which was adopted already during the building up period of the welfare state has largely remained in force. Accordingly, there has been opposition to a 'wealthy' Helsinki region among political decision-makers – in particular among those advocating rural political interests – and in the state administration (Haila & Le Galès 2005). Furthermore, during the 1990s there was a growing confrontation between the state and the capital region (*Pelkonen 2005*). The state's economic policy measures related to corporate taxation transferred significant amount of resources from the growth regions, particularly the capital region, to the peripheral areas and thus undermined the economic base of the cities in the region. Together with the economic decline at the turn of the millennium, these measures led to a severe deterioration of the financial situation of the capital region cities. Their responses to these state policies are analysed below in section 7.

It seems that some changes, however, are currently taking place in terms of state policies vis-à-vis the capital region. The current government has launched a metropolitan policy to deal with specific issues concerning the Helsinki region (Cabinet programme 2007). This policy will focus on "solving the region's problems related to land use, housing and traffic, promoting the implementation of economic development policy and internationalisation as well as preventing exclusion". While this seems to be an opening towards a state policy that places more emphasis on supporting the capital region, it does not refer to an initiation of strong urban locational policies. Furthermore, the

23 I use the terms Helsinki region and capital region as synonyms.

actual form and content of the metropolitan policy is still an open question. Nevertheless, it is worth noting that these shifts in state policies are somewhat paradoxically being carried out by a government that is led by the Centre Party, which has traditionally represented the agrarian population and has strongly promoted the development of rural areas.

It can thus be argued that Finland has not embraced a clear-cut urban locational strategy which would straightforwardly give priority to major cities or urban regions (*Pelkonen 2005*). Rather, the picture of state regional policy is more complex. There has been a shift towards growth- and competitiveness-oriented regional policy in which the growth of regional disparities and differences is approved of. Yet there has not been a strong state policy for supporting core urban growth regions, and in particular policies towards the capital region have been passive. Furthermore, the actual coherence of state regional strategy, implicit in Brenner's theorisation, can be questioned: different state sectoral policies may have largely divergent and even contradictory impacts on the development of a certain region. This is well illustrated by the case of the Helsinki region during the 1990s as the impacts of state technology and economic policies with respect to the capital region were strongly divergent. While technology policy concentrated resources in the capital region, at the same time economic policy had an opposite impact by weakening the region's cities' possibilities to develop competitive advantages (*ibid.)*.

The Centre of Expertise Programme – a showpiece of the Finnish approach to regional development

State policy for regional development in Finland hence includes elements of urban locational policies implemented in many Western European countries but also diverges from them, leading to a more 'moderate' version of locational policies. The Centre of Expertise Programme reflects these Finnish characteristics in an interesting way (*Häyrinen-Alestalo et al. 2006a*). The programme was established in 1994 in order to promote top-level expertise and knowhow in specific regions and technological fields. Since then it has been the state's primary instrument to support regional innovation infrastructures by focusing on strengthening regional cooperation and networking. In the programme, the emphasis is on endogenous factors of growth, thus stressing the identification of regional strengths as well as a region's own initiatives and actions in promoting these assets. After its establishment, it rapidly became the flagship of the new regional policy and gradually also an internationally recognised model for regional policy programmes striving for knowledge-based growth. While evaluations of the programme have reported significant impacts on regional growth processes (Kanninen et al. 2007), there have also been problems related to internationalisation,

overlaps with other regional policy programmes as well as weak results in some centres of expertise (*Häyrinen-Alestalo et al. 2006a*). In Jessop's terms, the programme reflects a neostatist, active territorial strategy in which the state promotes the preconditions for innovative activities and supports networking in various regions across the country.

From the outset, the programme was revolutionary in its approach. While the leading principle of regional policy had been to level out differences between regions and to support the weak ones, the programme embraced the strongest knowhow as the object of development. The idea was thus to promote the strong regions and fields of expertise and hence strengthen the knowledge-based economy. Furthermore, the programme has been strongly based on the idea of competition. In this respect, it is in line with Brenner's (2004, 260) view that the competition state strives to enhance the global position of its territories by developing competitive relationships between its regions. In the programme, competition has been considered as a means to increase the territorial division of labour and thus promote specialisation, but it has also had the consequence of hindering cooperation between the regions and the centres of expertise. Accordingly, while the programme has substantially increased cooperation in the regions, links between the centres of expertise have remained weak *(Häyrinen-Alestalo et al. 2006a*).

The broad scale and large number of regions and centres in the programme, however, indicate a deviation from clear-cut urban locational policies. At the beginning the programme consisted of 8 centres, all of which were based on universities and existing technology centres. At that point, the programme concentrated on the largest and the most important urban areas in the country. During the late 1990s and the early 2000s, the programme expanded considerably and at the end of 2006 there were 22 centres around the country which included 45 different fields of expertise ranging from 'hard' technological fields (ICT, biotechnology, energy etc.) to 'softer' areas, such as chamber music and travelling. The expansion widened the geographical coverage of the programme and highlighted its regional aspect (*ibid.*). Accordingly, a wide range of regions were included in the programme, from medium-sized cities to small peripheral localities. Although not stated explicitly, the goal of the programme thus evolved from promoting world top-class knowhow in key urban regions to developing preconditions for knowledge-based economic development on a broader geographical scale.

During the preparation of the current programme period 2007–2013, it seemed that there would have been a return to a stricter model and the promotion of increasing concentration through the reduction of the number of centres and regions (*ibid.*). This was in line with the guidelines of the Council of State (2005) and technology administration in that the programme should be better integrated with the objectives of innovation policy and that there should be a sharper focus to the programme. Such an

emphasis was supposed to lead to a programme concentrating on regions and fields with the best growth potential and highest level of expertise. It would thus have brought the programme closer to having the features of urban locational policies. However, the result was substantially different. The programme was remodelled in 2006 to comprise of national clusters, as the goal was to increase the cooperation between the centres of expertise. Yet the number of clusters remained rather high: there are currently 13 clusters in the programme whereas it was expected to cover only 6–8 clusters. Similarly, the number of centres (21) remains almost the same as before and the geographical coverage remains similar. The Centre of Expertise Programme thus does not strictly correspond to urban locational policies but reflects a model in which preconditions for regional competitiveness are developed within a broader approach and larger geographical scale.

7 Regional response to the knowledge-based economy: urban competitiveness policy and university-industry links in the Helsinki region

Having described some central characteristics related to the emergence of the competition state in Finland and having presented the results of my original studies in this respect, I will move on to sketch the rise of competitiveness policies in the Finnish capital region. As mentioned at the outset, at the regional level my focus has been on changes in the economic development policies of the cities in the capital region as well as on the approaches that region's three universities have adopted in order to commercialise academic research. I will relate my results primarily to Brenner's arguments concerning the rise of urban entrepreneurialism. In particular, my focus will be on questioning his view on the compatibility of the state's policies and urban strategies as well as on discussing the processes of the further rescaling of urban policy such as the rise of 'metropolitan reform initiatives'. I will also make some references to Jessop's discussion on entrepreneurial cities. Before going into the analysis, I will first present some central features of the Helsinki region.

The Helsinki region consists of four autonomous municipalities: Helsinki (approximately 560 000 inhabitants, the capital of Finland), Espoo (235 000 inhabitants), Vantaa (185 000 inhabitants) and Kauniainen (9 000 inhabitants). While the City of Helsinki has traditionally been the administrative centre of the country, the region has also been important in terms of industrial production. Furthermore, the capital region has been a national nucleus in terms of education and research which is reflected in the fact that it currently includes 18 institutions of higher education (9 universities and 9 polytechnics). During the 1990s, the region experienced a period of rapid economic growth, in particular through the rise of the ICT sector. The region became one of the fastest growing urban areas in Europe and was labelled one of the world's "hot new tech cities" (Levy 1998). At the turn of the millennium, due to the turbulence of the ICT sector and the dependence of the regional economy on it, increasing expectations were placed on the life sciences, welfare technologies and the environmental sector (Pelkonen 2003c). The dependence on the ICT sector, however, has thus far not caused any serious problems and in the early 2000s the region was successful in various competitiveness rankings at the European level (*Häyrinen-Alestalo et al. 2006a*). Furthermore, in a recent study on the transfer of European cities to the knowledge economy, Helsinki was placed among the "metropolitan stars" (Van Winden et al. 2007), which are cities

that have excellent foundations for knowledge-based development such as a strong and diversified economy and knowledge base, high educational level and quality of life as well as good external accessibility. As a result, they are successful in the creation and application of new knowledge, attract talent and investments, produce high levels of economic growth and have fertile ground and many advantages for further growth. While much of these characteristics undoubtedly fit the Helsinki region, it might also diverge from such metropolitan stars. Above all, it is doubtful whether the Helsinki region is as attractive for international investments and talented people as is assumed in the study. Accordingly, the policies of the region's cities would not only focus on "creating conditions to accommodate growth" as argued by Van Winden et al. (2007, 541), but they would also engage in active policies to attract new industries, develop new growth clusters and promote competitiveness (*Pelkonen 2005*).

The emergence of an urban competitiveness policy in the Helsinki region

In the Helsinki region a shift towards entrepreneurial urban policies took place in the late 1980s and early 1990s (*Pelkonen 2005*). Previously, urban policies towards industrial activity and entrepreneurship had been passive, which had led to a relocation of industrial jobs from the region during the 1960s and 1970s. The indifference was largely due to the fact that the cities were lacking a fiscal incentive for attracting firms and industries. At the turn of the 1990s the economic recession hit the region hard, causing a loss of over 70 000 jobs, turning long-term unemployment into a particularly severe problem, and thus providing an impulse for a policy change. Moreover, it was considered that political and economic integration in Europe as well as the growing mobility of labour and capital were favourable to large metropolitan areas but at the same time required more entrepreneurial and internationally oriented urban policies (see also Kolbe 2006). Along with the changes in national policies concerning state subsidies and corporate taxes, urban policies became more favourable towards corporate and industrial activity. At this point, also the need to place the Helsinki region 'centrally' in the wider economic division of labour emerged (cf. Jessop 2002, 190). Thus, in the late 1980s, the first visions of the Helsinki region as a leading economic region in Northern Europe arose and during the 1990s the reference point shifted to the European scale and gradually also to the global scale (*Pelkonen 2005*). This was an indication of an increasingly outward-looking, entrepreneurial urban orientation focusing beyond the national economy (cf. Brenner 2004, 178–192; Castells 2000, 409–424).

The City of Helsinki reflects well this development as various kinds of measures have been taken in order to establish a new, more entrepreneurially

oriented urban policy during the 1990s and early 2000s (for more details, see *Pelkonen 2005*, 695–696). Strategic planning took place in various working groups and high-level committees throughout the decade. A good example of these is the Helsinki Club, an extensive working group that was formed twice (1997 and 2002) by the mayor of Helsinki to develop urban and regional visions and to enhance the global position of the city. Several economic development memoranda and programmes (1992, 1996, 1998 and 2007) and an innovation strategy (2005) have subsequently been created. Furthermore, new organisations and institutions were established to implement entrepreneurial policies (e.g. Business Development Unit; Helsinki Region Marketing, in 1993; Culminatum – Helsinki Region Centre of Expertise, in 1995; Innovation Fund, in 2002; Greater Helsinki Promotion, in 2006). The latest large-scale entrepreneurial initiative has been the establishment of the Forum Virium Helsinki network in 2005. Based on public-private partnership, Forum Virium Helsinki aims to raise the Helsinki region and Finland to the forefront in digital services, to attract the world's top-level organisations to the region and to create new kinds of content and services for global markets (see Häyrinen-Alestalo et al. 2006c).

The characteristics of these institutions and organisations reflect two central features of entrepreneurial cities (Hubbard & Hall 1998). On the one hand, there is a focus on the active promotion of local economic development, creation of new businesses and strengthening the knowledge base. On the other, emphasis is put on advertising and promoting the city as a favourable business environment through place marketing and 're-imaging' the city. In terms of place marketing, hosting large-scale international (cultural) events has recently been taken up as a new key means in the city of Helsinki. In this regard, it is worth noting, however, that for instance the Eurovision Song Contest held in Helsinki in the spring of 2007 did not generate a large amount of publicity for the city in international press (see Pelkonen 2008). Overall, it is characteristic of these city marketing efforts that factors that are not strictly economic in nature (such as amenities, welfare and nature) are used to promote the city's position in interurban competition (Vanolo 2008). This fits nicely with Jessop's ideas of the increasing importance of extra-economic issues in building economic competitiveness.

In the early 2000s, a vision of the region as a "constantly developing, world-class innovation and business centre" was launched to crystallise the strivings of the city and the region (Helsinki Club 2003, 4). An urban policy has hence emerged which considers economic growth and competitiveness as key objectives of urban policy (*Pelkonen 2005*). Competitiveness is also increasingly interpreted as attractiveness, which implies the growing concern of urban decision-makers with how they can facilitate international firms and top professionals to settle in the region (also City of Helsinki 2007). This policy has been strongly based on the knowhow and high scientific and educational level of the region. In this respect, also the role of universities has

become crucial and the stand of the city administration towards universities has changed dramatically. Previously, the attitude of the city of Helsinki was reluctant as universities were considered 'useless' institutions that occupy unacceptably good facilities in the city centre. Nowadays, universities are regarded as essential elements in the urban economic development strategies of the capital region cities (Pelkonen 2003c). In this respect, increasing emphasis is currently being placed on converting the strong knowhow in R&D and high technology into business in new technological areas.

The central role of technopoles

Many of the objectives of these new urban policies come together in the building of technopoles. Jessop (2002, 188) sees technopoles as new types of urban places for production that create "location specific advantages" for producing goods and services. Along similar lines, I have defined technopoles as geographically limited areas that are comprised of an important concentration of high technology firms and/or high-level science-based research activities, and which are explicitly developed by urban economic development policies as new productive and economic areas (*Pelkonen 2005*, 703). Currently the Helsinki region includes over 10 such agglomerations and their further development is emphasised in recent strategies (e.g. Culminatum 2005). The cities of Helsinki, Espoo and Vantaa put increasing weight on the development of their respective technopoles: campuses of the University of Helsinki, the Otaniemi area in Espoo and Aviapolis in Vantaa. On the basis of their enterprise base and university connections, the technopoles in the Helsinki region can be divided into three categories (*Pelkonen 2005*):

- *Industrial complexes* create new high technology districts by attracting firms from Finland and abroad to locate in the area. They are agglomerations of large high technology firms and also include business parks offering premises and services for small and medium sized enterprises. They provide good preconditions for clustering between firms but have limited links to universities. Examples are the Keilalahti area in Espoo which is building up around Nokia and Fortum, and High Tech Center Helsinki in the Ruoholahti area.

- *Technology parks* are built around university campuses, but they also include important high technology entrepreneurship and business incubators. Unlike industrial complexes, however, technology parks are primarily comprised of small high tech firms, and a majority of the firms are located in business incubators. Big international firms have been attracted to the technology parks but so far the entrepreneurial base has been mainly domestic, as there are only a few large international corporations. This is an indication that technology parks thus far have

had trouble attracting foreign firms and, therefore, in creating locational advantages in Jessop's sense. Moreover, such internationalisation has been a more general problem in Finland, as has been evident in nearly all centres of expertise as well (*Häyrinen-Alestalo et al. 2006a*). The Otaniemi Science Park, Art and Design City Arabianranta and Helsinki Business and Science Park (Viikki) represent this model in the Helsinki region.

- *Science centres* are based on university campuses but are not entrepreneurially oriented like technology parks. They include only very little or no business activities. Biomedicum (medical research) and Kumpula Campus (natural sciences) in Helsinki are examples of science centres.

In terms of national and urban policies as well as university strategies, most attention and expectations have been directed towards technology parks. From the universities' perspective, these are intermediary organisations that try to bridge the gap between industry and academia and form a solution to the problem of commercialisation (*Pelkonen 2003b*, see below). Actually, many science centres are being developed towards the technology park model, for instance by establishing business incubators on university campuses. Similarly, many industrial complexes try to build linkages to universities, for instance by attempting to attract university institutions to their areas. Technology parks could also be easily seen as representing hybrid organisations that emerge in 'triple helix relations' between universities, industry and government (Etzkowitz & Leydesdorff 2000). I would argue, however, that the role of cities in their design, planning and financing has been decisive (*Pelkonen 2003b; 2005*). In most cases, technopoles in particular have been initiated and led by cities and universities. Cities should, hence, be considered as a 'fourth helix' in these developments.

Further rescaling as a part of urban competitiveness policy

Brenner (2004; 1998) stresses the compatibility of states' policies and urban strategies in enhancing the economic competitiveness of core urban regions. The development in the Helsinki region has, however, been nearly the opposite (*Pelkonen 2005*). The competitiveness policy in the capital region was launched and promoted by the cities while the state has not been a very active partner in developing the policy. To the contrary, the state has taken a negative stand towards growth in the Helsinki region and in the late 1990s a confrontation emerged between the state and the capital region cities. This holds for the development of technopoles as well. Although it is highly typical for competition states to promote the core urban regions by fostering entrepreneurial networks around academic R&D centres (see also Benner & Löfgren 2007), the central actors in developing the technopoles in the Helsinki region have been the cities and universities in the case of

technology parks and cities and firms in the case of industrial complexes. The state has not been the initiator, central organiser or the most important financier in any of the technopoles.[24] (For a closer account concerning the technopoles and the role of the state, see *Pelkonen 2005*, 698–701).

The state's deprecating policies towards the capital region have been an important factor in the recent rescaling of urban policy in the Helsinki region. These changes reflect what Brenner (2004) calls metropolitan reform initiatives and interurban networking initiatives as counter-tendencies to the state's urban locational policies. However, it is interesting that such tendencies have emerged although the state has not embraced strong urban locational policies. In Jessop's terms (2002, 191), such initiatives could be considered as horizontal economic development strategies in which common interests are pursued and joint or complementary resources exploited through building linkages between actors on the same scale.

Thus on the one hand, there has been an upscaling of urban policy towards the regional scale. Accordingly, increasing cooperation between the region's cities has been developed with particular attention to economic development policy (Pelkonen 2003c).[25] This largely parallels Brenner's view of the emergence of metropolitan reform initiatives that spread the goals of urban locational policies from the urban to the regional scale. Besides state policies, an important driving force in this respect has been the intensifying competition in particular between North European capitals but in more broad terms also between urban regions in Europe as well as globally (Cities of the Future 2005). This has been acknowledged in the Helsinki region (e.g. City of Helsinki 2007), and, accordingly, it has been considered that it is the Helsinki region as a whole, not the individual cities, that is competing with other European metropolitan regions. Administrative borders have lost their significance in terms of economic development and activity (*Pelkonen 2005*). In terms of place marketing and advertising this implies that the region as a whole is marketed and 'sold' in the international markets. In the Helsinki region, the rise of regionalisation, or metropolisation, however, is taking place significantly later than Brenner assumes.

A characteristic example of such metropolisation is the Urban Programme for the Helsinki Metropolitan Area, first formulated in 2002 and renewed in 2005, which has partly been created as a response to the state's negative policies (Pelkonen 2003c). The programme has been a joint initiative of the capital region cities aiming at strengthening cooperation and growth in the area and creating a shared metropolitan policy. Although the programme pays attention to the importance of social cohesion, following Brenner's

24 The Helsinki Business and Science Park in Viikki is an exception in this respect.

25 There is long-term collaboration between the cities in various other areas such as waste management, transport system planning, regional public transport provision and air quality management.

thesis it places a far greater premium on the problem of international competitiveness. Attention is thus paid in particular to attractiveness and top-level knowhow in the development of the region. This was evident in the first programme in which there was a clear emphasis on competitiveness both as a justification of the programme and in terms of actions and measures (ibid.). In the second programme, the objectives are more balanced, as wellbeing and welfare services, competitiveness, as well as urban structure and housing each form a separate line of action. Also the budgets are more balanced (Kaupunkiohjelma 2005; cf. Pelkonen 2003c). Similarly, the recent formulation of the innovation strategy (2005) and economic development strategy (2005) of the Helsinki region in collaboration between the cities and a large number of other actors is an indication of growing metropolisation.

Yet, simultaneously with metropolisation, several 'outward' rescaling processes have also been going on. In such initiatives, cooperative relationships are developed among geographically noncontiguous cities and regions. The aim is to exchange experiences and share information among cities confronted with similar problems as well as promote city-oriented lobbying activities at the European scale (Brenner 2004, 286–294). The City of Helsinki has been very active in developing such collaboration and has joined various interurban networks both nationally and internationally. At the national level, the capital region cities have formed a coalition with the three other largest cities in the country (Oulu, Tampere and Turku) in order to increase their influence in relation to the state. The establishment of this bloc was a direct response to the state's policies that undermined the operational preconditions of the largest cities during the 1990s (*Pelkonen 2005*). At the international level, partnership has been developed with Tallinn in Estonia through the establishment of Helsinki-Tallinn Euregio, which promotes cross-border integration and furthers the creation of a 'twin-region'. One area of cooperation between the cities has been scientific and technological development. In this respect the goal is to create a 'twin city of science' and increase the collaboration of the cities and universities in terms of technology transfer and entrepreneurship.

Furthermore, after Finnish accession to the EU in 1995 the City of Helsinki has become very active at the European scale. This has led to a "considerable change of scale" for urban actors in the Helsinki region (Haila & Le Galès 2005, 6). Accordingly, the European scale has gained a growing importance and the City of Helsinki has engaged in various European transnational networks. These include Eurocities, a network of major European cities aiming to increase their collaboration and promote their influence in European policy-making, as well as the Union of Capitals of the European Union which strives to strengthen the relationships between the capital cities of the EU (City of Helsinki 1999). The city has been very committed to these efforts, as the mayor of Helsinki was the president of both organisations in the early 2000s. In addition, Helsinki is a member

of the Union of Baltic Cities and the Network of European Metropolitan Regions and Areas. Overall, these initiatives have amounted to an "active city marketing strategy" on the international scene and a "foreign policy" particularly vis-à-vis the Baltic region and Brussels (OECD 2003, 208) as a part of the policies that aim to enhance the competitiveness of the city and region as a whole.

Universities' regional economic role and the problem of commercialisation

While both Brenner and Jessop emphasise the increasingly entrepreneurial and competitive stand of cities and urban regions, it is surprising that they do not take into account the universities' role as key players in entrepreneurial urban policies. According to Jessop, a defining feature of an entrepreneurial city is that it actively pursues explicitly formulated, innovative strategies "that are intended to maintain or enhance its economic competitiveness vis-à-vis other cities and economic spaces" (Jessop & Sum 2000, 2289). In the case of the Helsinki region, universities, intermediary organisations and technopoles, in particular in the form of technology parks, have gained a crucial role in such strategies (*Pelkonen 2005*; 2003c). Brenner (1999, 446), for his part, stresses that, in attempting to enhance territorial competitiveness, cities place a great weight on the "construction and promotion of strategic urban places for industrial development" such as industrial parks, office centres, and transport and shipping terminals. It seems clear, however, that instead of traditional industries, major cities and urban regions in Europe are increasingly emphasising the development of knowledge-based sectors in which the role of universities, research and innovative activities are crucial (Van Winden et al. 2007) and thus put a growing emphasis on creating productive capacities around them.

The urban competitiveness policy that emerged in the Helsinki region during the 1990s started to stress the role of universities in regional economic development. At the same time, several other factors have been involved in strengthening the universities' closer integration with regional economic life and their orientation towards markets. First, changes in national policies have been significant in pushing universities towards commercial activities (*Pelkonen 2003b;* see also e.g. Häyrinen-Alestalo et al. 2000; Kutinlahti 2005; Nieminen 2005). As mentioned above, the 'innovation turn' in national science and technology policy in the early 1990s implied a growing need to enhance the commercial utilisation of academic research through academic entrepreneurship, spin-off activities, patenting and licensing etc. In the early 2000s this trend has continued as the universities' 'third mission' of "interaction with society and the promotion of the societal impact of research results" was written into the university law (715/2004). While the

universities' role in regional development has been emphasised in Finland since the establishment of regional universities in the 1960s and 1970s, the new mission provided an impetus for universities to strengthen their links with the regional economy. Similarly, new law on university inventions that came into effect in January 2007 strengthened the push for commercialisation (369/2006). Accordingly, rights to research results were partly transferred from researchers to universities and a reporting obligation concerning new inventions was set for researchers. Furthermore, specifically with respect to the capital region and as a part of the larger restructuring of the university system, the Ministry of Education is strongly promoting the fusion of the Helsinki University of Technology, the Helsinki School of Economics and the University of Art and Design Helsinki into an 'innovation university'.

Second, the weakening of the universities' funding base, largely a result of national university and science policy, has been a factor that has had a clear influence on the universities' orientation towards markets (Pelkonen 2001). Third, there have been influential academic individuals who have quite early acknowledged the growing economic significance of university research (ibid). In many cases these individuals have been the agents of change who have started the development of commercial activities and related institutional arrangements in the universities.

With respect to the (regional) economic and commercial role of universities, my research has focused on three capital region universities' approaches to commercialising research, and their problems in commercial activities.[26] Furthermore, as commercialisation often takes place through separate organisations, I have taken a closer look at one such organisation in each university.[27] Interestingly, while science and technology parks were first established in Finland in the early 1980s (Vuorinen et al. 1989), the importance of various kinds of intermediary organisations as bridges between academic research and enterprises has become increasingly pronounced in the early 2000s. From the universities' perspective, along with the growing pressure to commercialise research, these organisations are needed to help university researchers identify, license, patent, incorporate and market research results (Niiniluoto 2006). Similarly, from the perspective of the state, the need to pay more attention to intermediary organisations

26 The universities' impact on their regions' development may, naturally, take place through various activities one of which is commercialisation. Other impacts stem from their roles as economic contributors (e.g. employer, buyer of products and services from local firms etc.), as shapers of human capital (attractor, educator and retainer of students) and as institutional actors in networks (Boucher et al. 2003; see also e.g. Lester 2007, 20–24).

27 The concept of commercialisation refers to a wide range of activities that aim at promoting the commercial application of academic research, such as patenting and licensing, research services and commissioned research, spin-off activities and collaboration between universities and industry (cf. *Pelkonen 2003b*; Kankaala et al. 2007, 29).

in innovation policy at the national level has been stressed (Koskenlinna 2004). The studied universities and respective intermediary organisations are the University of Helsinki and the Helsinki Science Park, the Helsinki University of Technology and Otaniemi International Innovation Centre, and the Helsinki School of Economics and LTT Research Ltd.[28] The fact that these universities differ in their historical background and disciplinary orientation as well as in their relationships to the business world has allowed for highlighting different commercialisation approaches as well as divergent problems that commercial activity may raise in academia (see Tables 4 and 5 below). Although the pressure towards commercialisation has been similar in all academic institutions, universities have different foundations for engaging in commercial activities. The different kinds of intermediary organisations that the universities have established reflect these institutional solutions to the problem of commercialisation.

During the late 1980s and early 1990s and along with the changes in national policies, the three capital region universities indeed began to pay more attention to commercialisation and building links with industry (*Pelkonen 2003b*). Even the University of Helsinki – in which there has traditionally been little interest in commercial activities due to its multidisciplinarity and the importance it places on academic values – started to consider possibilities for increasing collaboration with firms. By the late 1990s and early 2000s, commercial utilisation of research was clearly emphasised in all the universities' strategies. For instance, in the Helsinki University of Technology, commercial activity was regarded as the 'third mission' of the university already in 2000. Similarly, the "development of an innovation system" was raised as one of five specific developmental areas in the latest strategy of the University of Helsinki (2006). Along with the growing emphasis on commercial activities, however, all the universities have also stressed the importance of academic values (*Pelkonen 2003b*).

The contradictions of commercialisation

From the universities' perspective this development has, however, been contradictory in many respects. First, commercial activities are often unprofitable. These difficulties are well reflected in the intermediary organisations established by the University of Helsinki and the Helsinki University of Technology (*Pelkonen 2003b*) although it is also a more general phenomenon (e.g. Mowery 2007). In the case of the University of Helsinki, both the Helsinki Science Park and Helsinki University Licensing – a technology

28 The empirical work concerning the universities and intermediary organisations was carried out in 1999–2000 and the results described here thus reflect the situation at that time. The Helsinki Science Park operates currently under the name of the Helsinki Business and Science Park, and LTT Research Ltd merged with another company of the Helsinki School of Economics, HSE Executive Education, in Autumn 2007.

transfer company established in 1993 to promote the commercialisation of research results – showed losses at least during the first 6–8 years of operation (see also Tupasela 2000). The activities of the Innovation Centre of the Helsinki University of Technology were similarly unprofitable. Second, the scope of commercialisation varies in the universities and creates different problems. In the University of Helsinki, commercial activities concentrate on very few disciplines – namely bio- and natural sciences and information technology – while for a majority of university departments the commercial application of research results is a rather strange and remote objective. At the same time, even with respect to scientific fields that are more prone to commercialisation, such as biosciences, various problems have emerged in the commercialisation activities (e.g. Miettinen et al. 2006; Tuunainen 2004). The situation is nearly the opposite at the Helsinki University of Technology where the levels of industrial collaboration and external research funding are so high that they have started to put at risk the traditional activities of the university (*Pelkonen 2003b*). This implies that the university risks becoming a 'knowledge factory' that produces knowledge according to customers' needs.

Third, it has been highly contradictory that universities' budgets were cut during first half of the 1990s while at the same time increasing expectations were placed on their commercial activities (*Pelkonen 2003b*). This contradiction has been most severe with regard to the Helsinki University of Technology which is the largest technical university in the country with thus the most significant developments in terms of innovative activities being expected of it. In this respect there has been a lack of understanding that commercial applications and new innovations produced at the universities may only result from high-level and well-resourced basic functions, scientific research and research-based education. However, although the universities' resources have grown since the middle of the 1990s, the high proportion of external funding tends to pose problems. Accordingly, research at the universities has become increasingly dependent on external funding and a growing amount of research is carried out in short-term projects by temporary research staff (cf. Hakala et al. 2003). One consequence of this is that university research diverges from education which implies that the university education is less up-to-date and increasingly less based on the latest scientific findings (Snell 2001). Furthermore, with respect to university education, student numbers have grown significantly. Despite the growth of resources, the number of students per teacher is substantially higher in Finnish universities compared to many leading universities in the world (Nevala 1999; Himanen 2007).

Fourth, while the state has pushed universities to commercialise their research results, it has not provided them with institutional status and appropriate means to carry out such activities (*Pelkonen 2003b*). The main problem in this respect, which has come out clearly at the Helsinki School

of Economics, is that universities lack economic and legal independence. The universities' position in the state's budget economy has not allowed flexibility in financial terms such as for reserving funds or raising loans. Furthermore, the universities have had only a restricted right to own shares or establish limited companies, mainly through supporting foundations and trusts.[29] As the universities are expected to cooperate with firms and other organisations, they need to be able to act rapidly, tolerate uncertainty and make investments. From the perspective of the universities' commercial activity, the state's annual budgetary practice has proven to be too slow. In 2005, the Ministry of Education appointed two experts to prepare a proposition on how the universities' economic and administrative position could be renewed. The report, which was published in February 2007, made suggestions that would substantially strengthen the universities' financial autonomy and legal position (Jääskinen & Rantanen 2007). Accordingly, while the state would continue to fund the universities, they would be disconnected from the state's budget, which would provide them with flexibility. The universities' legal status would be changed in a way that would allow them to make financial commitments, own companies and property and accumulate capital.

Fifth, and finally, the integration of commercial activities into the universities' basic functions tends to be difficult, particularly in the intermediary organisations. While the integration of the functions has proven difficult in university departments (Tuunainen & Knuuttila 2008), it is still more challenging in intermediary organisations that normally do not have a teaching and research mission (*Pelkonen 2003c*). It thus seems that the universities may disintegrate internally if commercial activities are carried out in separate institutions which have very limited connections to the basic functions. Tables 4 and 5 below summarise my empirical findings with respect to the three universities and intermediary organisations. It is worth noting that many of the problems and contradictions related to commercial activities presented in the tables are not unique to these universities and intermediary organisations, but are more general challenges that other universities have also encountered. In the tables, such representative problems in the universities' commercial activities are shaded grey. For instance, problems related to the legal position have been relevant to all universities, but have come out particularly clearly in the case of the Helsinki School of Economics.

29 In 2004 the universities were provided with the right to establish companies, yet the right is subject to the permission of the Ministry of Education (Kankaala et al. 2007, 28). This right has been used infrequently (ibid.) and has been considered as irrelevant (Jääskinen & Rantanen 2006, 33).

Table 4. Perspectives on commercialisation in the three capital region universities.

	Profile of commercialisation	Problems related to commercialisation	Contradictions related to innovation policy
University of Helsinki	Strong emphasis on academic values. Disinterested in commercialisation up until late 1980s.	Commercial activities concentrate on a minority of disciplines. Mistrust of companies, unprofitableness.	What will happen to those disciplines that are not able to develop commercial activities?
Helsinki University of Technology	Close industrial collaboration in all fields since the establishment of the university; becomes increasingly intensive in the 1990s. Industrial collaboration regarded as a necessity.	Intensive industrial collaboration causing risks to the balanced development of the university. Problems related to commercial utilisation of research results and management of IPR.	Shortage of resources for basic functions is in contradiction with increasing commercial expectations.
Helsinki School of Economics	Close links to the business world throughout its history. Strong orientation towards markets in both research and education in the 1990s. Profitability as a central objective.	Commissioned research carried out at the university departments is often priced below the real costs. In these cases university budget funds are used to subsidise commercial activity.	Limitations related to the legal position of the university, in particular the lack of economic independence, hinder market activities.

Table 5. Intermediary organisations and their relation to commercialisation.

	Mission	Problems related to commercial activity	Integration of commercial and academic functions
Helsinki Science Park	Aims at increasing industrial collaboration and promoting entrepreneurship.	Lack of big biotech firms and innovative start-ups. Difficulties in adopting business principles.	Without large firms and with a limited number of R&D firms, functions tend to remain separate.
Otaniemi International Innovation Centre	Aims at enhancing the end of the innovation chain, the commercial utilisation of research results. Better management of IPR.	How can a centralised unit govern the commercialisation process at the level of the university? Low profits.	Due to the nature of the unit as service provider, substantial integration with basic functions of the university proves difficult.
LTT Research Ltd	Provides external clients with research services based on academic research. Aims at yielding profits.	Competition from other universities that do not price their research services according to real costs. Problems in finding customers in certain fields.	Combining the logics of academic and business activities causes problems. Operational form (limited company) separates the activities of the unit from the university.

While commercial activity has undoubtedly created problems in these universities, it has also been valuable in many respects. In many scientific fields, such as technical fields and the life sciences, industrial collaboration is highly important in that academic research can remain up to date with developments in the business world. Moreover, in some cases commercial activity has been able to generate important funds that have been channelled back to academic research in the universities. This was, for instance, the case at the technology transfer company of the University of Helsinki (*Pelkonen 2003b*). Overall, however, the universities' future seems to present challenges since their engagement in commercial activities will undoubtedly increase while many of the contradictions of commercial activities in universities remain unresolved (cf. Häyrinen-Alestalo & Peltola 2006; Kutinlahti 2005).

8 Conclusion

The objective of this summary article has been to present a synthesis of the results of the five research articles that form the main body of this thesis, and to set the empirical findings of the articles into a broader discussion concerning competition states and entrepreneurial regions. The main points of reference have been Bob Jessop's discussion of Schumpeterian competition states and Neil Brenner's thesis of rescaled competition state regimes. As comprehensive theses on the growing prioritisation of economic targets in state and urban policies, they provide interesting perspectives on my findings concerning the intensification of competitiveness policies in Finland at the national level and in the Helsinki region. In Jessop's analysis, the high level of abstraction, however, tends to conceal national differences and institutional variations, and accordingly, empirically verifying his claims is more difficult, or has to take place on a rather general level. The other side of the coin is that his thesis serves well in terms of directing attention to important lines of development and their interrelations, and in this respect it provides an applicable frame of discussion in the way it has been used in this article. In Brenner's thesis, the link to the 'real world' through empirical research is closer, and in this regard it is probably more useful as a research theory. It is hence also possible to draw more rigorous conclusions with respect to his arguments on the basis of empirical cases. The developments in Finland show both clear similarities as well as differences with respect to his account.

On a general level, many of the policy changes analysed in the articles of this thesis support the core arguments of the competition state theses. The studies point out that there has been a substantial accentuation of market-orientation and economic goals with respect to state science, technology, university, and regional policies. Although competitiveness has for long been a prevalent target in national policy-making, its significance as an objective has strengthened and is currently being emphasised throughout the studied sectors of governmental policy. Moreover, a similar intensification of economic goals has taken place across the institutional levels that have been the object of this study. Yet, the strengthening of the objectives of competitiveness and growth carries with it various problematic issues in policy-making at national and urban levels as well as in universities' activities. Probably the most important and cross-cutting issue in this respect would be to strike a balance between the economic perspectives and broader societal aims.

At the level of national policy-making, the Finnish approach largely reflects Jessop's view of a neocorporatist and neostatist strategy of the competition

state. Neostatism has been particularly visible in the active state strategies and measures to promote new technologies, knowledge-based industries and innovation systems both at the national and regional levels. Policy-making in the key sectors of the competition state, such as science and technology policy, has been carried out along an exclusive model of neocorporatism in which large interest organisations are integrated but civic organisations have largely been excluded. While the move towards market-orientation has been substantial, there has not, however, been an unambiguous shift towards a neoliberal policy. From the Finnish perspective, some of Jessop's conclusions seem somewhat exaggerated in this respect. For instance, he maintains that the Schumpeterian orientation towards innovation, competitiveness and entrepreneurship leads "to the subordination of the totality of socio-economic fields to the accumulation process so that economic functions come to occupy the dominant place within the state" (Jessop 2002, 132). Despite the increasing market-orientation, and strengthening of economic goals throughout state policies as well as increasing social and regional inequality, such a shift would imply a still more radical transformation in state policy orientation. Yet it remains to be seen to what degree the current centre-right government will further accentuate market-orientation in Finnish policies. The provision of public services in the future and the degree to which they will be subjected to privatisation and marketisation is at present a burning issue. The decisions that will be made in this respect will be illustrative in terms of the market-orientation of future policies. Overall, given the tendency of the competition state's policies to increase social and regional differences, the question of the level of inequality that is tolerated by Finnish society will be a crucial one.

The 'Schumpeterian' emphasis on innovations in Jessop's sense has been pronounced in Finland. Moreover, compared to many other countries, the predominance of technology policy with respect to science policy has been characteristic of Finland, which has placed greater emphasis on economic objectives. Currently, innovation policy has emerged as a broader framework for policies in this respect. It remains to be seen, however, whether it implies a one-way transfer of the goals of technology and innovation policy across other policy sectors or whether a more balanced approach to innovation policy will be adopted. Furthermore, a related question having cross-cutting significance is the persistence of the Finnish model of knowledge-based growth. Its endurance was already questioned in the early 2000s, as the so called new economy recession tended to undermine the premises of the growth model and highlighted its dependence on mobile technologies. As a consequence, the attitude of political decision-makers rapidly changed from praising the ICT sector as the third permanent industrial bedrock to seeing a need to merge the 'new' and the 'old' economy (*Pelkonen 2005*). Although Nokia and its network survived the recession reasonably well, recent developments have started to question the situation again. Redundancies in the ICT sector

and the transfer of production to countries with lower costs imply that this trend will continue and raise increasing doubts over the future of the ICT sector in Finland. Therefore a crucial question will be whether research and development activities in ICT and other high technology sectors will remain in Finland or whether they will also be transferred to other countries.

In terms of regional policy and development, there has been a shift from balanced regional development towards competitiveness and increasing regional differences which largely mirrors Brenner's thesis of urban locational policies. However, there are two important deviations in this respect. First, Finland has clearly been a latecomer to this development as the changes took place some ten years later than Brenner assumes. Secondly, and more importantly, the emphasis on core urban regions has not been as strong in Finland as Brenner suggests and there has not been a clear-cut priority for growth regions. This has also been reflected in the development and composition of the Centre of Expertise Programme. Furthermore, the capital region has had an ambivalent position in state regional policy priorities, and the conflict that emerged in the late 1990s between the state and the capital region cities is in direct contradiction to Brenner's thesis. Yet, and in line with Brenner's argumentation, the general changes in regional policy priorities have been accompanied with a view that regional differences will inevitably grow and that balanced regional development is no longer such a central goal in itself. In this light, the question of to what extent wide-ranging regional differences are acceptable will be important in the future.

At the regional level, cities in the capital region have adopted increasingly entrepreneurial policies since the early 1990s. These policies have entailed the active promotion of urban economic development with a particular focus on knowledge-based sectors and an increasing emphasis on the attractiveness of the region. These efforts bring out significant deviations from Brenner's thesis in that these policies have been launched by the cities and the state has not been an active partner in them. Furthermore, initiatives that Brenner calls counter-tendencies to the states' urban locational policies, such as rescaling upwards to the regional scale and an active engagement in national and transnational interurban networks, have largely been developed by the Helsinki region cities as a response to the *lack* of strong locational policies.

Along with growing pressure from state policies, universities in the capital region have engaged in intensifying attempts to commercialise academic research. At the same time, given the knowledge-based emphasis in the cities' urban policies, universities as well as various kinds of technopoles and intermediary organisations have gained a salient position in urban competitiveness policies. From this perspective it is a significant omission that Brenner does not discuss the role of universities in the urban strategies and policies that strive to enhance the cities' position in terms of global competition. The analysis of the commercialisation approaches of the three

universities in the capital region shows, however, that the universities have experienced noticeable problems in their attempts to integrate with the markets and commercialise research results. These problems are related to the low profits of commercial activities, the universities' inappropriate legal and economic position as well as the detachment of the commercial function from the universities' basic functions of teaching and research. For the universities, the question of how they are able to maintain their role as independent frontrunners in society and at the same time move towards the markets and commercialise research will be of crucial importance in the future.

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